

**DAVID E. GRAY**



SAGE Publications

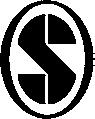
London  Thousand Oaks  New Delhi

© David E. Gray 2004 First published 2004

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under

the Copyright, Designs and Patents Act, 1988, this publication may be reproduced, stored or transmitted in any form, or by any means, only with the prior permission in writing of the publishers, or in the case of reprographic reproduction, in accordance with the terms of licences issued by the Copyright Licensing Agency. Inquiries concerning

reproduction outside those terms should be sent to the publishers.

SAGE Publications Ltd 1 Oliver’s Yard

55 City Road London EC2A 4PU

SAGE Publications Inc 2455 Teller Road

Thousand Oaks, California 91320

SAGE Publications India Pvt Ltd B-42, Panchsheel Enclave

Post Box 4109

New Delhi 110 017

**British Library Cataloguing in Publication data**

A catalogue record for this book is available from the British Library

ISBN 0 7619 4878 3

ISBN 0 7619 4879 1 (pbk)

**Library of Congress Control Number 2003109254**

Typeset by C&M Digitals (P) Ltd., Chennai, India

Printed in Great Britain by TJ International, Padstow, Cornwall

**Contents**

|  |  |
| --- | --- |
| ***List of case studies List of figures***  ***List of tables***  ***Preface*** | ix xi xiv  xvii |
| **1 Introduction** | **1** |
| Organizational research in the real world | 2 |
| The nature of theories | 5 |
| Inductive and deductive reasoning | 6 |
| The organization of the book | 8 |
| How to use the book | 10 |
| Summary | 11 |
| PART A PRINCIPLES AND PLANNING FOR RESEARCH | 13 |
| **2 Theoretical Perspectives and Research Methodologies** | **15** |
| Epistemological and ontological perspectives | 16 |
| Theoretical perspectives | 17 |
| Research methodologies | 25 |
| Selecting research approaches and strategies | 30 |
| Summary | 33 |
| **3 Selecting and Planning Good Research Projects** | **35** |
| Selecting a research topic | 36 |
| Topics to avoid | 42 |
| Planning the project | 44 |
| Locating the literature | 44 |
| Reviewing the literature | 52 |
| Writing the project proposal | 55 |
| The ethics of research | 58 |
| Summary | 62 |

PART B RESEARCH METHODOLOGY 65

1. **Experimental and Quasi-experimental Research Design 67**

The structure of experimental research 68

Design structure 76

Generalizing from samples to populations 82

Designing research instruments 89

Summary 95

1. **Designing Descriptive and analytical surveys 98**

What is a survey? 99

Types of survey 100

Stages in the survey process 103

Conducting a staff opinion survey 112

Reducing sources of error 116

Ethics and good practice in survey design 120

Summary 121

1. **Designing Case Studies 123**

When should we use case studies? 124

The case study design process 125

Types of case study design 131

Data collection sources 134

Quality in case studies: validity and reliability 135

Analysing the evidence 138

Composing case study reports 143

Summary 149

1. **Designing Evaluations 152**

The focus of evaluation 153

Schools of evaluation 159

Data collection sources 165

Data collection tools 167

Quality issues in evaluation 172

Planning the evaluation report 175

Enhancing the impact of evaluation 175

The ethics of evaluation 178

Summary 181

PART C DATA COLLECTION METHODS 185

1. **Collecting Primary Data: Questionnaires 187**

Why questionnaires? 188

Designing questionnaires 189

**CONTENTS**

Designing Internet and Web-based questionnaires 202

Piloting questionnaires 205

Maintaining quality: validity and reliability 207

Questionnaire administration 208

Summary 211

1. **Collecting Primary Data: Interviewing 213**

Why interviews? 214

Selecting interview approaches 215

Designing credible interviews 218

Interviewing skills 221

Group interviews 230

Telephone interviews 232

Safety issues 232

Ethical issues 235

Summary 236

1. **Collecting Primary Data: Observation 238**

Approaches to observation 239

Data gathering and recording 243

The process of observation 250

Validity and reliability issues 255

Data presentation 257

Ethics in observational studies 258

Summary 261

1. **Collecting Primary Data: Unobtrusive Measures 263**

Physical measures 264

Documents: running records 267

Documents: episodic records 269

The new digital archives 271

Ethical issues in using the digital technology 275

Summary 281

PART D ANALYSIS AND REPORT WRITING 283

1. **Analysing and Presenting Quantitative Data 285**

Categorizing data 286

Data entry, layout and quality 289

Presenting data using descriptive statistics 293

Analysing data using descriptive statistics 297

The process of hypothesis testing: inferential statistics 301

Statistical analysis: comparing variables 306

Statistical analysis: associations between variables 312

Summary 318

1. **Collecting and Analysing Qualitative Data 319**

Characteristics of qualitative research 320

Qualitative research design 321

Collecting qualitative data 324

Analysing data: content analysis 327

Analysing data: grounded theory 329

Approaches to analysing data 340

Quality in qualitative analysis 342

Summary 346

1. **Writing the Research Report 348**

The report writing process 349

The report style and structure 353

Ethical and legal considerations 363

Developing a writing style and tone 365

The review process 367

Presentations 367

Summary 368

PART E RESEARCH AND CHANGE IN THE REAL WORLD 371

1. **Action research and change 373**

What is action research? 374

The action research process 377

The role of researchers and participants 383

Methods of data gathering 384

Validating action research 387

Ethics 388

Limitations of action research 390

Summary 392

*Glossary of terms* 394

*References* 408

*Index* 417

Case Study 2.1 The conflict of paradigms 19

Case Study 2.2 Experimental research 26

Case Study 2.3 Action research 26

Case Study 2.4 Analytical surveys 27

Case Study 2.5 Phenomenological research 28

Case Study 2.6 Heuristic research 29

Case Study 3.1 Ethical dilemmas in research 60

Case Study 4.1 Getting those research questions right 71

Case Study 4.2 A quasi-experimental design 77

Case Study 5.1 Survey lessons from US opinion polls 101

Case Study 5.2 Conducting a survey through an e-mail discussion group 110

Case Study 6.1 The taxi-dance hall 129

Case Study 6.2 A case study of team working 140

Case Study 6.3 Time-series analysis 142

Case Study 6.4 Japanese transplant companies in the UK 147

Case Study 7.1 Programme evaluation through force-field analysis 155

Case Study 7.2 Invalid evaluation – getting it wrong on a Friday afternoon 173

Case Study 7.3 Short supply of ethics at the Stock Exchange 178

Case Study 8.1 Questionnaire piloting to get it right 206

Case Study 9.1 Interviewer bias – it can drive you to drink! 220

Case Study 9.2 Secret boxes, soap operas and spiders 231

Case Study 10.1 How smart is covert observation? 240

Case Study 10.2 The impact of gaudy colours 255

Case Study 10.3 The role of observation in market research 260

Case Study 11.1 Natural accretion measures – cold coffee! 264

|  |  |  |
| --- | --- | --- |
| Case Study 12.1 | From survey instrument to data matrix | 291 |
| Case Study 13.1 | Developing grounded theory – open coding | 332 |
| Case Study 13.2 | Developing grounded theory – selective coding | 337 |
| Case Study 14.1 | Typical structure for an academic journal article (abridged) | 360 |
| Case Study 15.1  Case Study 15.2 | Improving children’s health through action research The real world – when an action  research project goes wrong | 386  391 |

|  |  |  |
| --- | --- | --- |
| Figure 1.1  Figure 1.2 | Overview of the (simplified) research process  An illustration of how the inductive and deductive methods can be combined | 4  8 |
| Figure 2.1 | Relationship between epistemology, theoretical |  |
|  | perspectives, methodology and research methods | 16 |
| Figure 2.2 | The elements of the research process | 30 |
| Figure 3.1 | Organizational sponsorship and support networks | 38 |
| Figure 3.2 | Johari window showing choices between familiar |  |
|  | and unfamiliar work experience and personal knowledge | 39 |
| Figure 3.3 | Planning schedule for a research project using Microsoft Project | 45 |
| Figure 3.4 | Touring and camping to acquire, analyse and |  |
|  | synthesize information | 47 |
| Figure 3.5 | Proposal development flowchart | 57 |
| Figure 4.1 | Stages in the planning and operation of an |  |
|  | experimental and quasi-experimental research project | 68 |
| Figure 4.2 | Illustration of the relationship between dependent, |  |
|  | independent and intervening variables | 74 |
| Figure 4.3 | Interpretable and uninterpretable patterns of results in |  |
| Figure 4.4 | a non-equivalent control group design with pre-test and post-test A 2  2 factorial design showing all possible  combinations of factors | 81  83 |
| Figure 4.5 | Relationship between the population, sampling |  |
|  | frame and sample | 84 |
| Figure 4.6 | Relationship between research instrument and |  |
|  | operationally defined subject areas and the issue of validity | 90 |
| Figure 5.1 | Stages in the survey planning process | 104 |
| Figure 5.2 | Types of questionnaire | 108 |
| Figure 6.1 | A comparison of two case study positions: |  |
|  | inductive and deductive | 126 |
| Figure 6.2 | Multiple case study method | 127 |

|  |  |  |
| --- | --- | --- |
| Figure 6.3 | Main types of case study design | 132 |
| Figure 6.4 | Replication through use of multiple cases | 133 |
| Figure 6.5 | Pattern matching of case study data | 140 |
| Figure 6.6 | Four written forms of case study | 145 |
| Figure 6.7 | Alternative written report structures | 146 |
| Figure 7.1 | Cost–benefit analysis of a proposed training event | 154 |
| Figure 7.2 | Force-field analysis of organizational change programme | 156 |
| Figure 7.3 | The European TQM model | 157 |
| Figure 7.4 | Model of schools of thought in evaluation | 160 |
| Figure 7.5  Figure 7.6 | Sample opinionnaire  Repertory grid showing an individual’s constructs of an appraisal | 169  171 |
| Figure 7.7 | Communication methods for a variety of audiences | 176 |
| Figure 7.8 | Format for an evaluation report | 177 |
| Figure 7.9 | A framework for ethical evaluation | 180 |
| Figure 8.1 | Example questionnaire | 192 |
| Figure 8.2  Figure 8.3 | Flowchart for planning of question sequences Uses of typography and emphasis to aid the  functionality of skip instructions | 199  202 |
| Figure 8.4 | The use of spacing to help identify groups of elements | 203 |
| Figure 9.1 | Example of an informed consent form | 234 |
| Figure 10.1 | Observation research roles | 240 |
| Figure 10.2  Figure 10.3  Figure 10.4 | The data gathering process  Observation of till service in a busy staff canteen,  illustrating inadequate notes and more comprehensive notes Analysis of dialogue between manager and  subordinate using the Flanders interaction analysis system | 245  246  250 |
| Figure 10.5 | Alternative ways of event coding | 251 |
| Figure 11.1 | Sources of personal records | 271 |
| Figure 12.1 | Types of categorical and quantifiable data | 286 |
| Figure 12.2 | Types of question that yield nominal data | 287 |
| Figure 12.3 | Types of question that yield ordinal data | 288 |
| Figure 12.4 | Section of questionnaire comprising an age profile | 293 |
| Figure 12.5 | Bar chart for the nominal data in Figure 12.2 | 294 |
| Figure 12.6 | Pie chart of the nominal data in Figure 12.2 | 295 |
| Figure 12.7 | Histogram illustrating interval data in Table 12.10 | 296 |
| Figure 12.8  Figure 12.9 | Bar chart for nominal data with comparison between groups Stacked bar chart for nominal data with  comparison between groups | 297  297 |

|  |  |  |
| --- | --- | --- |
| Figure 12.10 | Frequency polygons for two sets of continuous |  |
|  | data showing test scores | 298 |
| Figure 12.11 | Solid polygon showing data for two variables: |  |
|  | department and age | 298 |
| Figure 12.12  Figure 12.13  Figure 12.14 | The theoretical ‘normal’ distribution with mean  0 Areas of acceptance and rejection in a standard normal distribution with   0.05  Perfect positive correlation and perfect | 301  304 |
|  | negative relationship | 315 |
| Figure 12.15 | Example of a highly positive correlation |  |
|  | with cigar-shaped envelope | 315 |
| Figure 13.1 | An interactive model of qualitative data analysis | 321 |
| Figure 13.2 | Conceptual framework for a research project on |  |
|  | drug liberalization and policing | 322 |
| Figure 13.3 | Example of a documentation sheet | 326 |
| Figure 13.4 | Qualitative analysis as a circular process | 328 |
| Figure 13.5 | Making connections between categories and |  |
|  | sub-categories by examining a phenomenon in |  |
|  | terms of its properties, dimensions and causal conditions | 334 |
| Figure 13.6 | Making connections between categories and |  |
|  | sub-categories: the impact of intervening conditions | 335 |
| Figure 13.7 | The impact of outcomes and consequences on |  |
|  | the original causal conditions | 339 |
| Figure 14. 1 | Pyramid of evidence model for report design | 356 |
| Figure 15.1 | The action research model | 379 |
| Figure 15.2 | The data gathering process: concept mapping |  |
|  | of team conflict within a workplace | 382 |

**List of tables**

|  |  |  |
| --- | --- | --- |
| Table 1.1 | Basic and applied research | 2 |
| Table 1.2  Table 1.3 | Examples of real world research topics Summary of the deductive process within an organizational context | 3  7 |
| Table 2.1  Table 2.2 | A summary of positivist and phenomenological paradigms Distinctions between phenomenological research  and ethnography | 22  22 |
| Table 3.1 | Techniques for generating and refining research ideas | 41 |
| Table 3.2 | An overview of literature sources | 46 |
| Table 3.3 | Skills for critical engagement with the literature | 53 |
| Table 3.4 | Research method and uses of the literature | 55 |
| Table 3.5 | Typical structure for an academic proposal | 59 |
| Table 3.6 | A checklist of ethical issues | 61 |
| Table 4.1  Table 4.2 | Types of applied research questions with examples Differences between experimental, quasi-experimental and non-experimental research | 71  77 |
| Table 4.3 | Non-experimental design with intact group | 78 |
| Table 4.4 | Post-test only with non-equivalent control groups | 79 |
| Table 4.5 | One-group pre-test/post-test design | 79 |
| Table 4.6 | Experimental group with control | 80 |
| Table 4.7  Table 4.8 | Quasi-experimental design with non-equivalent control A three digit random numbers table of numbers between 0 and 999 | 80  86 |
| Table 5.1 | Methods for increasing response rates with postal questionnaires | 119 |
| Table 6.1 | Selection criteria for different research strategies | 125 |
| Table 6.2 | The process of case study construction | 131 |
| Table 6.3 | Six sources of evidence and their strengths and weaknesses | 135 |
| Table 6.4 | Personnel and production practices in the case study plants | 148 |

|  |  |  |
| --- | --- | --- |
| Table 7.1 | Types of evaluation and their defining question or approach | 158 |
| Table 7.2 | An evaluation schema based on the systems approach | 161 |
| Table 8.1  Table 8.2 | Approaches to asking the embarrassing question: ‘Did you sabotage the intranet?’  The advantages and disadvantages of open  and closed questions | 194  198 |
| Table 8.3 | Common response category quantifiers | 200 |
| Table 8.4 | Likely timing of responses for postal survey | 209 |
| Table 9.1  Table 9.2 | Comparison of interviews and self-administered questionnaires Characteristics of structured, semi-structured and  unstructured interviews | 216  218 |
| Table 9.3 | Checklist of Do’s and Don’ts of interviewing | 229 |
| Table 9.4 | Examples of explanations given by telephone interviewers | 233 |
| Table 9.5 | Best practice guidelines for researcher safety | 233 |
| Table 9.6 | Actions that can be taken for conducting an ethical interview | 235 |
| Table 10.1 | Features of social situations as a basis for observational data sources | 244 |
| Table 10.2 | Flanders interaction analysis system | 249 |
| Table 10.3 | Examples of what to observe when entering field settings | 254 |
| Table 12.1 | Measurement scales and their uses | 287 |
| Table 12.2  Table 12.3  Table 12. 4  Table 12.5 | Number of employees per department (nominal scale)  Frequency table showing number of responses on attitude questionnaire (ordinal)  Frequency table showing number of employees scoring within various ranges on IQ test Frequency distribution of employee scores on  an in-house work-related test | 288  289  289  290 |
| Table 12.6 | Data matrix from survey showing data coding for each variable | 291 |
| Table 12.7 | Distinguishing between different types of non-response | 292 |
| Table 12.8 | Appropriate use of charts and graphs for frequency data | 294 |
| Table 12.9 | Age profile of e-commerce development company | 295 |
| Table 12.10  Table 12.11  Table 12.12  Table 12.13 | Frequency table for age range (interval) data Percentage of respondents answering  for each attitude category over a two-year period Method of scoring each response  category in order to calculate the mean score  Calculation of mean scores for attitude categories to discover attitude trends over a two-year period | 296  299  299  300 |
| Table 12.14 | Potential errors in hypothesis testing | 303 |
| Table 12.15 | Guide to selection of statistical tests | 305 |
| Table 12.16 | Contingency table of data for analysis | 307 |

|  |  |  |
| --- | --- | --- |
| Table 12.17  Table 12.18  Table 12.19  Table 12.20  Table 12. 21  Table 12.22 | Analysis of data in Table 12.16  Example of a one-sample chi-square test with uneven expected frequency  Stress score data for experimental and control  groups before and after a stress counselling programme Ranking of two retail store features based on  customer scoring  Summary of statistical tests available for measuring association between two variables Observed and expected values of graduate and  non-graduate employment against responsibility level  within an organization | 307  308  309  311  312  313 |
| Table 12.23 | Rankings of judgements made by supervisors  on the performance of five administrators | 316 |
| Table 12.24  Table 12.25 | Comparison of ranking differences between the two judges Association between annual rainfall and annual  sales of face cream over a ten-year period | 316  317 |
| Table 13.1 | Orientation of research questions | 323 |
| Table 13.2 | Sampling strategies in qualitative research | 325 |
| Table 13.3  Table 13.4 | Open coding: definition of terms  The properties and dimensions of the category ‘information seeking’ | 331  333 |
| Table 13.5 | Selective coding: definition of terms | 336 |
| Table 13.6 | Techniques for demonstrating validity | 343 |
| Table 15.1  Table 15.2 | Sectors where action research projects have been used Elements that contribute to community  relationships in action research | 377  384 |

**Preface**

This book has been written to provide you with an introduction to research strategies and methods, and to help you develop the necessary skills to design and implement a research project. In the ‘real world’ of commercial businesses, public sector organiza- tions, voluntary services, professional networks and neighbourhoods and communities, pressing issues exist that require answers. Often, we can only arrive at these answers through a systematic process of investigation – that is, research. And, as the real world becomes more competitive, complex and uncertain, many people are recognizing the importance and value of research: surveying employee attitudes or customer responses to a new produce or service; evaluating a professional development programme; discov- ering how new computer systems can be better implemented; assessing the impact of a drug awareness programme in schools – to name but a few. Hence, research is no longer just the remit of the professional researcher or the university academic. It is increasingly becoming an integral part of the job specification for many occupations.

Why bother reading this book? You may be interested in research because you are undertaking a research project as part of an academic programme such as a doctorate, MBA, MSc or first degree. Or you may be undertaking a programme of professional development that involves you in a research study of some kind, pos- sibly within your own workplace. Alternatively, your job role may require that you undertake a research investigation of some kind. In all cases, this book is for you! I would like to take this opportunity to express my warm and sincere thanks to a number of people who gave their support and practical help by reviewing and com- menting on various chapters of the book, namely: Sally Rumsey, Paul Barber, Josie Gregory and Colin Griffin, at the University of Surrey; Trevor Murrells of Kings College, London; Julia Gaimster, London College of Fashion; and my friend and fellow researcher Ken Marsh at the University of Greenwich. I would also like to thank the stu- dents on the doctoral and Work Based Learning degree programmes at the University of Surrey who had the ‘pleasure’ of reading earlier versions of these chapters and who gave me invaluable feedback. My sincere thanks also to Michael Carmichael, Zoe Elliott and Patrick Brindle at Sage, who were always there with practical assistance, advice

and encouragement. Any mistakes, omissions or biases, of course, remain my own.

Finally, good luck in your research – and enjoy it!

**David E. Gray,**

School of Management, University of Surrey

**Introduction**

**1**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Describe why research in the real world is of increasing importance.**
* **Explain the nature of theories.**
* **Outline the stages in the research process.**
* **Distinguish between inductive and deductive methods.**

This book is designed to introduce you to some of the essential methodologies, approaches and tools of research. In doing so, we will explore some of the philoso- phies and theoretical perspectives behind the many different ways of conducting research, as well as providing practical examples and guidance as to how research should be planned and implemented. Later in this chapter we will look at the structure of the book, but first we need to examine the nature of the research process and why research is being seen as increasingly important in a growing number of organizations and contexts.

The term ‘globalization’ is often used to describe a world that is becoming increasingly integrated and interdependent and where large, international organi- zations dominate. Within this globalized world, change in business and working environments has become rapid, pervasive and perpetual. Organizations have adapted to this uncertainty in a number of ways. One approach has been to under- stand (research) and develop relationships with both markets and supply chains. Most forward-looking organizations have also recognized the need for a multi- skilled and occupationally agile workforce. It has also required that organizations understand what motivates their workforce and how people embrace change. All this has had an enormous impact on the way organizations operate and interact with the ‘real world’, and how they communicate and work. Small and medium- sized enterprises (SMEs) have also had to modernize their organizational practices and to understand their working environment, as have public sector organizations (including hospitals, schools, colleges and universities) and voluntary organizations.

Faced with a more competitive, dynamic and uncertain world, a knowledge of research methods is important because it helps people in organizations to understand, predict and control their internal and external environments (Sekaran, 1992). It also means that those involved in commissioning or sponsor- ing organizational research are better placed to understand and manage the work of researchers and to objectively evaluate and interpret the outcomes of research. Hence, it becomes possible to calculate the potential risks and benefits in imple- menting research projects. But what do we mean by the term ‘research’?

**ORGANIZATIONAL RESEARCH IN THE REAL WORLD**

Research in this context is a ‘systematic and organized effort to investigate a specific problem that needs a solution (Sekaran, 1992: 4). Hence, organizational research is often about how (process) to solve real problems (content) (Gill and Johnson, 1997). This may have a very practical focus (applied research), with an emphasis on achieving measurable outputs that are specific to a particular organi- zation.The results of such research may be of significance to that organization, but difficult to generalize elsewhere. On the other hand, organizational research may also be concerned with clarifying, validating or building a theory (basic research). Its importance to individual organizations may be determined by the extent to which this theory is translatable into a specific organizational context. However, most organizations will only see research as valid if it is seen to lead to practical outcomes (Easterby-Smith et al*.,* 1991). Then there are forms of research com- prising collaboration between the researcher and professional practitioners (action research). Table 1.1 provides a summary illustrating a continuum between basic and applied research.

**TABLE 1.1** BASIC AND APPLIED RESEARCH

**Basic research Applied research**

*Purpose Purpose*

Expand knowledge of organizational Improve understanding of specific processes organizational problems

Develop universal principles Create solutions to organizational problems Produce findings of significance and value Develop findings of practical relevance to

to society organizational stakeholders

*Source*: Adapted from Saunders et al., 2000

Organizational research is not an easy option. First, there is no single sub- ject called ‘organizational research’. It draws upon fields of inquiry such as socio- logy, anthropology, philosophy, communication, economics and statistics. This often means having to adopt an inter-disciplinary approach, incorporating ideas and approaches from a diverse range of subject backgrounds. Secondly, organiza- tions are complex and the people working within them very busy, making it often difficult for the researcher to gain access to the people that can provide informa- tion. Key research sponsors, gatekeepers or stakeholders may also have their own

agendas that are not necessarily the same as those of the researcher. Thirdly, research may be influenced by the fact that organizations are working in a world of competition, market influences and financial constraints. Research projects may have to be modified or cancelled. Research sponsors may criticize what they read in research reports, especially when these reveal organizational inefficiencies.

We have looked, briefly, at organizational research, but what do we mean by the ‘real world’? To many, it means businesses, companies, hospitals, schools, colleges or other organizations, and certainly these are important sites for, and sponsors of, research.The real world, however, can also include communities where people live, including residential areas, parks, shops, local amenities or areas where young people congregate. It could also mean networks such as community groups, educationalists, professional associations, management associations or trades unions. Increasingly it could also include virtual communities where people communicate with each other through the Internet. In other words, the real world comprises any setting where human beings come together for communication, relationships or discourse.

The real world, of course, contains a myriad of subjects that lend themselves to research. Table 1.2 provides just a general ‘feel’ for the kinds of areas that this book will explore.You will, of course, be thinking about or developing a research topic of your own.

**TABLE 1.2** EXAMPLES OF REAL WORLD RESEARCH TOPICS

Women firefighters – breaking down barriers to recruitment Disability awareness training – does it change attitudes? Project management in virtual organizations

Identifying the factors that influence youth club membership and attendance Why don’t people buy recycled paper?

The feasibility of transferring advanced horticultural practices to a poor developing country. A case study of three Romanian villages

Does targeted neighbourhood policing work?

Housing association accommodation and services – an evaluation of tenant attitudes

How can call centre response times and the quality of feedback to customer queries be improved? The impact of intensive ‘exam culture’ on pupil sickness and medical referral

An evaluation of government ‘special measures’ on pupil attainment and teacher retention Working trajectories – getting disaffected youths from ethnic communities into the jobs market

Measuring and improving customer satisfaction in a library

But how do we go about addressing these kinds of research areas? One way to solve any problem in the real world is to do so *systematically*.While Figure 1.1 presents a very simplified version of such an approach (which will be modified in later chapters), it does at least offer a starting point. Gill and Johnson (1997) rightly caution that the wise researcher is one who gives equal attention to each of these phases. Many naïve researchers are tempted to rush into the ‘collect

Identify broad area for research

Analyse data

Present findings

Formulate plan

Collect information

Formulate research objectives

Decide approach

Select topic

**FIGURE 1.1** OVERVIEW OF THE (SIMPLIFIED) RESEARCH PROCESS (ADAPTED FROM GILL AND JOHNSON, 1997)

information’ stage without first very clearly defining the research topic, and its objectives.The results of this fuzziness only become transparent later on, with the effect that the researcher has to cycle back to an earlier stage in the research process, or to start again.

Figure 1.1 shows that it is possible, in principle, to move from the identifi- cation of the research focus right through to the presentation of the findings in a neat sequence of steps. This, however, is an idealized model and is not necessarily the norm. The complexities of researching in the real world mean that the researcher may often have to revisit previous stages in the research process. For example, at the analysis stage it might emerge that the collection of important data has been overlooked. New plans will have to be formulated and the data collected before the researcher is able to return to the analysis and presentation of the find- ings. Indeed, as we shall see in later chapters, it is also valid for the researcher to enter ‘the field’ to gather data, with only the most general of notion of what she/he is looking for, and for the data to help in the generation of concepts and theories. Figure 1.1 implies that the research process in a highly practical one.You identify a problem, decide on how to tackle it, collect data (which often involves discussions with other people), analyse and present findings and take action. But research, as was mentioned above, is more than a mere pragmatic activity; behind it lies the foundations of academic theories that have emerged through the process of scientific enquiry and investigation over many decades and even centuries. To

theories we now turn.

**THE NATURE OF THEORIES**

A theory has been defined as:

*A set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting phenomena. (Kerlinger, 1986: 9)*

One might, for example, have a theory of business failure.The factors that might explain this could be: poor management practices, antagonistic labour relations, insufficient staff training, or a lack of investment.The actual failure of the business has to be explained by examining and understanding the interrelationship between these factors. Such understanding may take the form of a theory that is predictive or explanatory in nature. Indeed, a theory is only worthy of the term if it has some predictive qualities. As we shall see, if a theory is no longer predic- tive, a crisis ensues and the theory will, over time, be challenged and replaced by a new one.

There is no reason, however, to denigrate organizational research activity that is not theory-orientated. In both educational and organizational research it may be quite valid to undertake an investigation that merely seeks to find the immediate goal of a relationship between two variables (a characteristic that is measurable such as income, attitude, action, policy, etc.) But as Kerlinger (1986) points out, the most satisfying and usable relationships are those that can be *generalized*, that is, applied from the specific instance of the research findings to many phenomena and to many people.This is the nature of theory.

|  |  |
| --- | --- |
| **Activity 1.1** |  |
| Examine each of the following statements and decide whether you agree with them. A theory:   * Is an accumulated body of knowledge, written by acknowledged experts. * Informs ‘state-of-the-art’ concepts and innovations. * Is a body of work where inconsequential or misleading ideas can be filtered out. * Represents knowledge that should be viewed critically and rejected when incompatible with practice. * Adds interest and intellectual stimulation to a project. * Acts as a model against which ‘live’ business processes can be evaluated. * Guides the execution of research methodology. *Suggested answers are provided at the end of the chapter.* (*Source*: adapted from Gill and Johnson, 1997) | |

**INDUCTIVE AND DEDUCTIVE REASONING**

We have briefly examined the nature and uses of theory – but in research should we begin with theory, or should theory itself result from the research? Dewey (1933) out- lines a general paradigm of enquiry that underpins the scientific approach, consisting of inductive discovery (induction) and deductive proof (deduction). Deduction begins with a universal view of a situation and works back to the particulars; in contrast, induction moves from fragmentary details to a connected view of a situation.

***The deductive process***

The deductive approach moves towards hypothesis testing, after which the prin- ciple is confirmed, refuted or modified. These hypotheses present an assertion about two or more concepts that attempts to explain the relationship between them. Concepts themselves are abstract ideas that form the building blocks of hypotheses and theories. The first stage, therefore, is the elaboration of a set of principles or allied ideas that are then tested through empirical observation or experimentation. But before such experimentation can take place, underlying concepts must be operationalized (made measurable) in such a way that they can be observed to confirm that they have occurred. Hence, measures and indicators are created. For example, if research is to be conducted into how organizational communications can be improved, we would first have to establish an operational definition of ‘communication’ within the context of organizational interactions. Through the creation of operational indicators, there is a tendency to measure and collect data only on what can actually be observed; hence, subjective and intangi- ble evidence is usually ruled out.Table 1.3 provides a summary of this process.

***The inductive process***

Through the inductive approach, plans are made for data collection, after which the data are analysed to see if any patterns emerge that suggest relationships between variables. From these observations it may be possible to construct generalizations, relationships and even theories. Through induction, the researcher moves towards discovering a binding principle, taking care not to jump to hasty inferences or con- clusions on the basis of the data.To ensure a degree of reliability, the researcher often takes multiple cases or instances, through, for example, multiplying observations rather than basing conclusions on one case (see Figure 6.4, Chapter 6).

It would not be true to say that the inductive process takes absolutely no note of pre-existing theories or ideas when approaching a problem.The very fact that an issue has been selected for research implies judgements about what is an important subject for research, and these choices are dependent on values and concepts. This may help to formulate the overall purpose of the research. But the inductive approach does not set out to corroborate or falsify a theory. Instead, through a process of gathering data, it attempts to establish patterns, consistencies and meanings.

**TABLE 1.3** SUMMARY OF THE DEDUCTIVE PROCESS WITHIN AN ORGANIZATIONAL CONTEXT

**Stages in the deduction process Actions taken**

Organizational mission Read and take into account

Theory Select a theory or set of theories most appropriate to the subject under investigation

Hypothesis Produce a hypothesis (a testable proposition about the relationship between two or more concepts)

Operationalize Specify what the researcher must do to measure a concept

Testing by corroboration or attempted Compare observable data with the theory. If falsification corroborated, the theory is assumed to

have been established

Examine outcomes Accept or reject the hypothesis from the outcomes

Modify theory (if necessary) Modify theory if the hypothesis is rejected

***Combining the inductive and deductive methods***

Inductive and deductive process, however, are not mutually exclusive. Adapting Dewey’s (1933) formulation for a modern problem, let us say a researcher has been asked to investigate the problem of staff absenteeism. Taking a selection of facts (absentee rates over time, in different departments and across staff grades), the researcher is able to formulate a theory (inductive approach) that absenteeism is related to working patterns (see Figure 1.2). It is particularly rife among lower grade workers who are the objects of quite rigorous supervision and control.The researcher then becomes interested in what other impact this form of control may have on working practices (deductive approach). A working hypothesis becomes formulated that over-zealous supervision has produced low morale and therefore low productivity levels amongst sections of the workforce. This hypothesis is tested by the introduction of new working methods in some sections, but not others (an experimental approach using a control group), to compare producti- vity levels between traditionally supervised and the newly supervised sections. Figure 1.2 provides a summary of this process.

|  |  |
| --- | --- |
| **Activity 1.2** |  |
| For your own research project, consider whether you intend to adopt an induc- tive approach, a deductive approach, or a combination of the two. List three reasons for your choice. | |

Related theory

DEDUCTIVE

REASONING

Accumulation of facts, data, etc.

INDUCTIVE

REASONING

Hypothesis/theory

testing

Working theory

Experimental design

**FIGURE 1.2** AN ILLUSTRATION OF HOW THE INDUCTIVE AND DEDUCTIVE METHODS CAN BE COMBINED

**THE ORGANIZATION OF THE BOOK**

The book is divided into five parts. Part A prepares the way by looking at the underpinning philosophy of research and the selection of suitable research topics. In Chapter 2 the nature and significance of theory is justified and the epistemological (philosophical) basis of theory explored. The chapter also describes how different epistemological perspectives provide the basis for research methodologies like experimental research, surveys, grounded theory and action research, all of which are discussed in detail in later chapters. If you have little or no previous experience of philosophy you may find this chapter rather daunting, but you are encouraged to tackle it, as it will help you to understand the approaches taken in later chapters.

Having provided an overarching view of research philosophy, methodo- logies and methods, Chapter 3 gets down to the practical issue of selecting and planning a research project. Advice is offered on how to identify research topics that meet your personal needs and experience and how to write a successful research proposal. Some of the ethical issues raised by research are discussed, an important topic that we return to many times in the book.

Part B deals with research methodology, beginning with experimental and quasi-experimental design (Chapter 4).This is an appropriate place to begin our dis- cussion of methodology since this is one of the oldest and, in a sense, the classical approach to research design.The chapter not only describes and justifies alternative experimental designs, but introduces concepts (such as validity and reliability) that are appropriate for, or at least addressed by, many other research methodologies.

In Chapter 5 we take another, and increasingly popular, research methodo- logy, surveys, and describe different types of survey and the process of survey design.A distinction is made between self-administered and interview-administered surveys and the merits of each is discussed. Partly because of their scale, surveys can be prone to sources of error such as sampling error, data collection error and interviewer error. Some practical advice is provided on how to cope with these.

Another widely used research methodology is the case study (Chapter 6). For many years, the case study approach has been wrongfully denigrated by some researchers as lacking in rigour, partly because it is often based upon a small number of cases. However, as this chapter shows, case studies, if carefully planned, can provide a powerful means of exploring situations where there is uncertainty or ambiguity about phenomena or events.

While some research methodologies attempt to uncover new knowledge, evaluation (Chapter 7) involves exploring how existing knowledge is used to inform and guide practical action. Hence, evaluation might be used to gauge whether a teaching or training programme has been successful. But evaluation can also be used to report on much larger units of analysis such as national policies or government-sponsored intervention programmes.

Of course, whichever research methodology (or combination of methodo- logies) we use, none can be successful without the use of sound and reliable data collection tools (Part C). We start here with a look at, perhaps, one of the most commonly used research instruments, the questionnaire (Chapter 8).This chapter shows how designing valid and reliable questionnaires requires adherence to a large number of design considerations that range from the writing of individual questions to the layout of the questionnaire itself.

Questionnaires are often used as the data gathering instrument for struc- tured or semi-structured interviews. But interviews (Chapter 9) also necessitate that the researcher acquires a wide range of other skills associated with actually conducting the interview. This chapter, then, provides some practical advice on planning and conducting a variety of interview approaches.

But how do we know that interviewees tell the truth? It may be that they do not know the answer to a question or that they want to hide something from us. Another data gathering method, then, is observation (Chapter 10), which could be used either instead of an interview or as a supplement to it (to verify the data). As this chapter shows, observation might be undertaken overtly, where the subjects of the research know that they are being observed or covertly where the role of the researcher is disguised. Observation can also be conducted as either a participant in the research setting or as a non-participant.

One of the problems in using questionnaires, interviews and observations is that they are potentially reactive – that is, the data may become contaminated because of, say, the bias of the research instruments or the way data are interpreted by the researcher.An often neglected but equally powerful data gathering method is what is termed ‘unobtrusive measures’ (Chapter 11), which offer the benefit of being non-reactive. Unobtrusive measures include physical evidence, documen- tary evidence and archival analysis, including documents held on the World Wide Web. Unobtrusive measures can offer flexible, creative and imaginative ways of collecting data, often to verify findings from the use of other data collection methods.

Having collected data, they have to be analysed and the results presented (Part D). Of course, plans and designs for analysis should have been completed long before this stage. Chapter 12 looks at techniques for presenting and analysing quantitative data, including ways of categorizing quantitative data and cleaning

and coding data.This chapter also examines ways of analysing data using descriptive statistics and the use of some elementary inferential statistical techniques.

In contrast, Chapter 13 looks at the possible sources of qualitative data and approaches to how data can be analysed. It looks particularly at content analysis and grounded theory methods and also includes approaches such as the use of narratives, conversational analysis and discourse analysis.You will probably notice in reading Chapters 12 and 13 how some of the philosophical issues raised in Chapter 2 are given substance in terms of what is researched, and how the research is conducted.

After you have collected your data, you now want to present them in a way that enhances their credibility and impact. Chapter 14 looks at different types of research report including organizational and technical reports, and studies written up as part of an academic dissertation or thesis. Advice is given on key features, such as the use of appropriate language and writing style for the intended audi- ence, and the structure of the report.

In a sense, Chapter 14, covering the final outcome of a research project, the report, might seem a logical place to conclude this book. However, Chapter 15 goes a stage further by exploring the purposes and methods behind action research. In Chapter 1, and, indeed, throughout the book, we look at real world issues and problems. Action research is about addressing and, in some cases, solv- ing these problems.The key focus is not research for the sake of expanding knowl- edge but on achieving change (often in a company, school, college or community setting). We have, therefore, come full circle from Chapter 1, where we explored the need to address some of the issues in the ‘real world’, to our final chapter, which demonstrates one methodology that actively engages in the process of change through research.

**HOW TO USE THE BOOK**

How is the book best used as an aid to research? You could think of it as a research manual that also explains the theoretical underpinnings of research methods and provides guidance on where to find further information. It is recommended that you read through the book, focusing on the objectives listed at the beginning of each chapter. Try to get a feel for which aspects will be of particular interest to you, noting any ideas or topics, approaches and practices that strike you as relevant to your research. During the research process revisit these parts and if you need further guidance, check with the further reading lists at the end of each chapter, which include brief details of the nature of the sources listed. Note also any asso- ciated Case Studies (which are designed to illustrate key research methodologies or approaches) and Activities (designed to promote thinking, reflection and skills development and, in the case of websites, a guide to additional information or resources). It is not expected that you attempt to complete all Activities – tackle those that you think would be most useful.Where it is felt appropriate, suggested answers are given for some Activities at the end of the relevant chapter.

As indicated, some of the Activities in the book ask you to visit specified websites. If you do not have access to the Web, then these Activities can be omit- ted. But do note the growing importance of the Web for research in terms of pro- viding data, tools, resources and access to both research respondents and fellow researchers.

|  |
| --- |
| **SUMMARY**   * The growing complexity of the world means that research in the real world is of growing importance. An understanding of the world is underpinned by theory. * A theory consists of a set of interrelated concepts, definitions and propositions that demonstrate relationships between variables. * Through the inductive approach, data are accumulated and analysed to see if relationships emerge between variables. The deductive approach uses a theory to generate a working hypothesis concerning relationships between variables. The hypothesis is operationalized and tested and is either accepted or rejected on the basis of the evidence. * The inductive and deductive methods are not mutually exclusive. A researcher may   turn a collection of data into a set of concepts, models or even theories (inductive approach) which are then tested through experimentation (deductive). |

|  |  |
| --- | --- |
| **Suggested answers for Activity 1.1** |  |
| Actually, it is all of them! | |

**Principles and Planning for Research**

**PART A**

**Theoretical Perspectives and Research Methodologies**

**2**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Distinguish between ontology and epistemology in research.**
* **Explain the different perspectives taken by positivism and interpretivism.**
* **Describe the different research methodologies and the conditions for their selection.**
* **Distinguish between exploratory, descriptive and expana- tory research studies.**

We saw in Chapter 1 that the research process requires us to engage at some stage with theoretical perspectives. Sometimes this will occur before under- taking the research (the deductive approach) and at other times after it (inductive). But the question remains: which theories? The purpose of this chapter is to examine the range of theoretical perspectives available, and also to provide some guidance as to which ones are most appropriate to the research project or task you are undertaking.

This is far from being a simple process. Particularly if you are relatively new to the study of philosophical perspectives, the nature of theories and their signi- ficance to research methodologies may not be instantly obvious. Furthermore, the nature and meaning of some philosophical perspectives is still contested and debated.

At this stage it is suggested that you read this chapter without dwelling too much on individual sections. If some of the discussion seems rather abstract do not worry – keep going. It is suggested that you return to this chapter at a later stage when its relevance will, hopefully, be clearer and more easily absorbed.

**EPISTEMOLOGICAL AND ONTOLOGICAL PERSPECTIVES**

We looked in Chapter 1 at the nature of theories and their relationship to practice. We now need to explore the range of theories available to us as researchers, and how we can select between them.As Crotty (1998) demonstrates, one of the problems here is not only the bewildering array of theoretical per- spectives and methodologies, but the fact that the terminology applied to them is often inconsistent (or even contradictory). Crotty suggests that an interrela- tionship exists between the theoretical stance adopted by the researcher, the methodology and methods used, and the researcher’s view of the epistemology (see Figure 2.1).

* Objectivism



Theoretical perspectives

Methodology

Epistemology

Methods

* Constructivism
* Subjectivism
* Positivism
* Interpretivism
  + Symbolic interactionism
* Experimental research
* Survey research
* Ethnography
  + Sampling
  + Statistical analysis
  + Questionnaire
    - Phenomenology  Phenomenological
    - Observation
      * Critical inquiry
      * Feminism
      * Postmodernism etc.

research

* Grounded theory
* Heuristic inquiry
* Action research
* Discourse analysis etc.
* Interview
* Focus group
* Case study
* Document analysis
* Content analysis etc.

**FIGURE 2.1** RELATIONSHIP BETWEEN EPISTEMOLOGY, THEORETICAL PERSPECTIVES, METHODOLOGY AND RESEARCH METHODS (ADAPTED FROM CROTTY, 1998)

Despite the natural tendency for the researcher (and especially the novice researcher!) to select a data gathering method and get on with the job, the choice of methods will be influenced by the research methodology chosen.This methodo- logy, in turn, will be influenced by the theoretical perspectives adopted by the researcher, and, in turn, by the researcher’s epistemological stance.

Ontology is the study of being, that is, the nature of existence.While ontol- ogy embodies understanding *what is*, epistemology tries to understand *what it means to know*. Epistemology provides a philosophical background for deciding what kinds of knowledge are legitimate and adequate.

Western thought remains divided by two opposing ontological traditions. Heraclitus, (*c*.535–*c*.475BC), who lived in Ephasus in ancient Greece, placed an emphasis on a changing and emergent world. Parmenides (*c*.515–*c*.445BC), who succeeded him, placed quite a different emphasis on a permanent and unchanging reality. Between a Heraclitean ontology of *becoming* and a Parmenidean ontology

of *being*, it is the latter that has held sway in Western philosophy. Hence, reality is seen as being composed of clearly formed entities with identifiable properties (in contrast to a Heraclitean emphasis on formlessness, chaos, interpenetration and absence). Once entities are held to be stable they can become represented by symbols, words and concepts. Thus a representationalist epistemology results in which signs and language are taken to be accurate representations of the external world.This representationalist epistemology orientates our thinking towards out- comes and end-states rather than processes of change. According to Chia (2002), only relatively recently has postmodern epistemology challenged traditional *being* ontology with notions of a *becoming* orientation and the limitations of truth-seeking.

It would be a mistake, however, to view *being* ontology as leading to epis-

temological positions that are unitary and holistic. As Figure 2.1 shows, at least three positions have emerged. Objectivist epistemology, for example, holds that reality exists independently of consciousness – in other words, there is an objec- tive reality ‘out there’. So, research is about discovering this objective truth.A theore- tical perspective closely linked to objectivism is positivism (see Figure 2.1). In contrast, constructivism rejects this view of human knowledge. Truth and mean- ing do not exist in some external world, but are created by the subject’s inter- actions with the world. Meaning is *constructed* not discovered, so subjects construct their own meaning in different ways, even in relation to the same phenomenon. A theoretical perspective linked to constructivism is interpretivism. Yet, while interpretivism and objectivism hold different epistemological positions, both are still based upon a *being* ontology (Chia, 2002).

In contrast to constructivism, for subjectivism, meaning does not emerge

from the interplay between the subject and the outside world, but is imposed on the object by the subject. Subjects do construct meaning, but do so from within collective unconsciousness, from dreams, from religious beliefs, etc. Despite Crotty’s assertion that this is ‘the most slippery of terms’ (1998: 183), postmoder- nism can be taken as an example of a theoretical perspective linked to subjectivism (and *becoming* ontology).

As Easterby-Smith et al. (1991) point out, having an epistemological per- spective is important for several reasons. First, in can help to clarify issues of research design. This means more than just the design of research tools. It means the overarching structure of the research including the kind of evidence that is being gathered, from where, and how it is going to be interpreted. Secondly, a knowledge of research philosophy will help the researcher to recognize which designs will work (for a given set of objectives) and which will not.

**THEORETICAL PERSPECTIVES**

Of the different theoretical perspectives available, positivism and various strands of interpretivism are, or have been (arguably) among the most influential.These, and a number of other stances such as critical inquiry, postmodernism and feminism, will be used here to illustrate the value of adopting theoretical perspectives that

are congruent with the researcher’s epistemology and demonstrate the kinds of research methodologies that emerge from them.

***Positivism***

Positivism was the dominant epistemological paradigm in social science from the 1930s through to the 1960s, its core argument being that the social world exists externally to the researcher, and that its properties can be measured directly through observation. In essence, positivism argues that:

* Reality consists of what is available to the senses – that is, what can be seen, smelt, touched, etc.
* Inquiry should be based upon scientific observation (as opposed to philo- sophical speculation), and therefore on empirical inquiry.
* The natural and human sciences share common logical and methodological principles, dealing with facts and not with values.

Hence, ideas only deserve their incorporation into knowledge if they can be put to the test of empirical experience. Positivists saw the natural sciences as pro- gressing through the patient accumulation of facts about the world in order to produce generalizations known as scientific laws.To achieve this, the act of scien- tific inquiry was taken to be the accumulation of ‘brute data’ such as shape, size, motion, etc. For positivists, then, both the natural and social worlds operated within a strict set of laws, which science had to discover through empirical inquiry.This is a brief summary of positivism, but, as Bryman (1988) notes, there have been many different versions of positivism which overlap, and which rarely agreed precisely on its essential components.

**The case against positivism**

Positivism has been described as ‘one of the heroic failures of modern philosophy’ (Williams and May, 1996: 27). As Hughes and Sharrock (1997) show, one of the fundamental mistakes of positivism is some of the assumptions it made about scientific inquiry. Science is, certainly, interested in producing theoretical explana- tions but not just on the basis of what can be observed. Indeed, some branches of science consist almost entirely of mathematical formulations. Black holes and sub- atomic particles, for example, have been reasoned from only the most indirect of evidence. Typically, science does not begin from observation, but from theory, to make observations intelligible. Thus, even observations are ‘theory laden’ (Williams and May, 1996).

Adopting a positivistic stance is not only about adopting certain approaches to the design of research studies. As Crotty (1998) points out, it implies that the results of research will tend to be presented as objective facts and established truths. Popper (1968), however, suggests that no theory can ever be proved simply by multiple observations, since only one instance that refutes the theory

would demonstrate it as false. According to Popper, theories cannot be proved to be true – they can only be proved to be false. Hence, with the deductive approach, theories are tested through observation, leading either to the falsification and dis- carding of the theory, or to the creation of, as yet, unfalsified laws.

Normal science consists of extending the knowledge of the facts that a paradigm suggests are especially important, by extending the match between those facts and the paradigm’s predictions, and by further articulation of the paradigm itself. But normal science is a puzzle-solver and if it persistently fails to solve prob- lems, then the failure of existing rules will lead to a search for new ones. This is part of what Kuhn (1970) has called a paradigm crisis. It is a crisis which may turn into a revolution if anomalies continue and new people enter the field, such as researchers who are not committed to the traditional rules of normal science and who are able to conceive of a new set of rules.

Case Study 2.1 provides an illustration of how stubbornly existing para- digms resist change – even in the face of emerging evidence that strongly con- tradicts their fundamental underpinning principles.

|  |
| --- |
| **Case Study 2.1 The conflict of paradigms**  On 22 June 1633, Galileo Galilei was put on trial by the Inquisition in Rome. Charged with heresy, this old man of 69 was threatened with torture, imprison- ment and even burning at the stake unless he renounced his claim that the Sun and not the Earth was the centre of the universe, and that the Earth moved around the Sun, and not vice versa.  The idea of an Earth-centred universe was first promulgated by Ptolemy of Alexandria in AD 150.The beauty of the Ptolemaic system was that it worked with some accuracy, enabling astronomers to predict, through complex geometry, the movements of the heavenly bodies. Later, these geocentric (Earth-centred) ideas became entrenched into the teachings of the Church, largely because they fitted neatly with the Christian notion of the centrality of mankind (Hellman, 1998). Hence, Ptolemaic theory became a combination of science, philosophy and reli- gious ideas. Note the long-standing relationship between science and philosophy!  In 1543 Nicolaus Copernicus, a canon in the Polish Catholic Church, challenged the accepted Ptolmaic paradigm with a heliocentric (Sun-centred) system, but, as was traditional, his book was written in Latin and thus was not widely read.A century later, Galileo’s repetition of these ideas in Dialogue on the Great World Systems, Ptolemaic and Copernican (1632) was written in Italian.As such it was widely accessible and seen by the Pope, Urban VIII, as a direct threat to the teachings of the Church.  Under the Inquisition’s threats, Galileo retreated. These threats, after all, were not idle. A friend, Bruno, who had advocated the idea of an infinite universe, was tried by the Inquisition, refused to recant and was burned at the stake in 1600. Of course, the Church could not completely suppress the *Dialogue*. In fact, it was published in England before Galileo’s death in 1642. But the trial before the Inquisition is an interesting example of the bitterness that can be generated when far-reaching new ideas come into open conflict with the vested interests of long- accepted paradigms – and the entrenched nature of these paradigms. |

|  |  |
| --- | --- |
| **Activity 2.1** |  |
| Take a once accepted theory (say, in management, education, or your own professional subject) that has become less popular or even discredited in the eyes of some (theorists and/or practitioners), and show how alternative theo- ries have emerged. What factors have helped to discredit the once ‘accepted’ theory? What factors have helped to promote the emerging alternative theory? | |

We have seen that, at least in the social sciences, many of positivism’s avowed certainties about the nature and results of scientific inquiry have been strongly chal- lenged. It should be noted, however, that some of the approaches to research deve- loped under positivism, such as an insistence on empirical inquiry, the use of experimental designs and inductive generalization (to name but three), are still with us (as we shall see in later chapters) in one form or other. In general, however, we now inhabit a post-positivist world in which a number of alternative perspectives (for example, anti-positivist, post-positivist and naturalistic) have emerged.

***Interpretivism***

A major anti-positivist stance is interpretivism, which looks for ‘culturally derived and historically situated interpretations of the social life-world’ (Crotty, 1998: 67). There is no, direct, one-to-one relationship between ourselves (subjects) and the world (object).The world is interpreted through the classification schemas of the mind (Williams and May, 1996). In terms of epistemology, interpretivism is closely linked to constructivism. Interpretivism asserts that natural reality (and the laws of science) and social reality are different and therefore require different kinds of method. While the natural sciences are looking for consistencies in the data in order to deduce ‘laws’ (nomothetic), the social sciences often deal with the actions of the individual (ideographic).

*Our interest in the social world tends to focus on exactly those aspects that are unique, indi- vidual and qualitative, whereas our interest in the natural world focuses on more abstract phenomena, that is, those exhibiting quantifiable, empirical regularities*. (Crotty, 1998: 68)

Let us now look at five examples of the interpretivist approach: symbolic interac- tionism, phenomenology, realism, hermeneutics and naturalistic inquiry.

**Symbolic interactionism**

Symbolic interactionism grew in the 1930s out of the work of the American prag- matist philosophers, including the social psychologist George Herbert Mead and John Dewey.These philosophers shared a disenchantment with what they saw as the irrelevance of contemporary philosophy and social science. Instead, they wanted to

develop a way of conceptualizing human behaviour that focused on people’s practices and lived realities. Central to social behaviour is the notion of meaning. Human interaction with the world is mediated through the process of meaning-making and interpretation.The essential tenets of symbolic interactionism are that:

* People interpret the meaning of objects and actions in the world and then act upon those interpretations.
* Meanings arise from the process of social interaction.
* Meanings are handled in, and are modified by, an interactive process used by people in dealing with the phenomena that are encountered.

Thus, meanings are not fixed or stable but are revised on the basis of experience. This includes the definition of ‘self ’ and of who we are. For example, if someone is promoted from supervisor to manager their perception of themselves and the company may change, which in turn leads to changes in the meaning of objects, and thereby to changes in behaviour.

In order to understand this process, researchers have to study a subject’s actions, objects and society from the perspective of the subject themselves. In practice, this can mean entering the field setting and observing at first-hand what is happening. The kinds of research methodologies that are often associated with symbolic interactionism include ethnography and the use of participative obser- vation methods (Chapter 10) and grounded theory (Chapter 13).

**Phenomenology**

Phenomenology holds that any attempt to understand social reality has to be grounded in people’s experiences of that social reality. Hence, phenomenology insists that we must lay aside our prevailing understanding of phenomena and revisit our immediate experience of them in order that new meanings may emerge. Current understandings have to be ‘bracketed’ to the best of our ability to allow phenomena to ‘speak for themselves’, unadulterated by our preconcep- tions. The result will be new meaning, fuller meaning or renewed meaning. Attempts are made to avoid ways in which the prejudices of researchers bias the data. The key is gaining the subjective experience of the subject, sometimes by trying to put oneself in the place of the subject. Hence, phenomenology becomes an exploration, via personal experience, of prevailing cultural understandings. Value is ascribed not only to the interpretations of researchers, but also of the sub- jects of the research themselves. Far from using a theoretical model that imposes an external logic on a phenomenon, this inductive approach seeks to find the internal logic of the subject. Table 2.1 provides a summary of some of the major distinctions between positivism and phenomenology.

Tesch (1994) distinguishes between phenomenological research and

ethnography. While both are based upon description and interpretation, ethno- graphic research is focused more on culture and phenomenology, on human experience of the ‘life-world’. So, while the unit of analysis of phenomenology is often individuals, ethnographers make use of ‘sites’. Phenomenology makes use

**TABLE 2.1** A SUMMARY OF POSITIVIST AND PHENOMENOLOGICAL PARADIGMS

**Positivist paradigm Phenomenological paradigm**

**Basic beliefs** The world is external and objective The world is socially constructed

and subjective

The observer is independent The observer is a party to what is

being observed

|  |  |  |
| --- | --- | --- |
|  | Science is value-free | Science is driven by human interests |
| **The researcher** | Focus on facts | Focus on meanings |
| **should** | Locate causality between variables  Formulate and test hypotheses (deductive approach) | Try to understand what is happening  Construct theories and models  from the data (inductive approach) |
| **Methods** | Operationalizing concepts so that | Using multiple methods to establish |
| **include** | they can be measured  Using large samples from which to generalize to the population  Quantitative methods | different views of a phenomenon  Using small samples researched in depth or over time  Qualitative method*s* |

*Source*: Adapted from Easterby-Smith et al., 1991

**TABLE 2.2** DISTINCTIONS BETWEEN PHENOMENOLOGICAL RESEARCH AND ETHNOGRAPHY

**Ethnography Phenomenological research**

Study of culture Study of the ‘lifeworld’ human experience Discovering the relationship between culture Exploring the personal construction of the

and behaviour individual’s world

Studying ‘sites’ Studying individuals

As many informants as possible Between 5 and 15 ‘participants’

Use of observation, and some interviewing Use of in-depth, unstructured interviews Unit of analysis: event Unit of analysis: meaning unit

Reliability: triangulation Reliability: confirmation by participants

*Source:* Adapted from Tesch, 1994

almost exclusively of interviews, while ethnography’s prime mode of data collec- tion is observation (as a participant or outside observer), which is sometimes sup- plemented by interview data for clarification. Ethnographers pay particular attention to language and the ways in which terms are used in certain cultures. A summary of the distinctions between phenomenological research and ethnogra- phy is given in Table 2.2.

**Realism**

Realism begins from the position that the picture that science paints of the world is a true and accurate one (Chia, 2002). So for the realist researcher, objects of research such as ‘culture’, ‘the organization’, ‘corporate planning’ exist and act quite independently of the observer.They are therefore as available for systematic analysis as natural phenomena. Hence, knowledge is advanced through the process of theory-building in which discoveries add to what is already known. But

although reality comprises entities, structures and events, realism holds that some observable ‘facts’ may be merely illusions. Conversely, there may be phenomena that cannot be observed but which exist none the less.

**Hermeneutics**

The hermeneutic tradition is associated largely with nineteenth century German philosophy, but also has connections with phenomenology and the psychoanaly- sis of Freud. According to a hermeneutic perspective, social reality is seen as socially constructed, rather than being rooted in objective fact. Hence, hermeneu- tics argues that interpretation should be given more standing than explanation and description. Social reality is too complex to be understood through the process of observation. The scientist must interpret in order to achieve deeper levels of knowledge and also self-understanding.

**Naturalistic inquiry**

According to Lincoln and Guba (1985), in the naturalistic paradigm there are mul- tiple constructed realities that can only be studied holistically. Inquiry into these mul- tiple realities raises more questions than it answers, so that prediction and control of outcomes is a largely futile expectation, although some level of understanding can be achieved (Guba, 1985). Inquiry itself cannot be detached but is value-bounded by the perspectives of the researcher. Rather than aiming to generalize, inquiry develops an ideographic body of knowledge that describes individual cases. Within these cases, plausible inferences on events and processes are made, but this falls short of claiming causality. Phenomena can only be understood within their environment or setting; they cannot be isolated or held constant while others are manipulated.The real world is too complex, diverse and interdependent for this (Lincoln, 1985).

Research designs cannot be pre-specified, but ‘emerge, unroll, cascade, or

unfold during the research process’ (Lincoln, 1985: 142). Because naturalists believe in the concept of multiple, constructed realities, it would be incongruent to specify these designs in advance. However, the types of research methods usu- ally selected by naturalistic inquirers involve those most closely associated with a human component: interviewing, participant observation, document and content analysis (and other forms of unobtrusive measures).

***Critical inquiry***

It is worth having a brief overview of critical inquiry because it offers quite a dif- ferent perspective to positivism and interpretivism. This critical form of research is a meta-process of investigation, which questions currently held values and assump- tions and challenges conventional social structures. It invites both researchers and participants to discard what they term ‘false consciousness’ in order to develop new ways of understanding as a guide to effective action. In a Marxist sense, the critical inquiry perspective is not content to interpret the world but also to change it.The assumptions that lie beneath critical inquiry are that:

* Ideas are mediated by power relations in society.
* Certain groups in society are privileged over others and exhert an oppressive force on subordinate groups.
* What are presented as ‘facts’ cannot be disentangled from ideology and the self-interest of dominant groups.
* Mainstream research practices are implicated, even if unconsciously, in the reproduction of the systems of class, race and gender oppression.

Those adhering to the critical inquiry perspective accuse interpretivists of adopt- ing an uncritical stance towards the culture they are exploring, whereas the task of researchers is to call the structures and values of society into question.

***Feminism***

Like Marxism and critical inquiry, feminist epistemologies take the view that what a person knows is largely determined by their social position. But whereas Marxism defines social class in terms of a person’s relationship to the means of production, feminism regards women themselves as an oppressed social class. Because men come from a position of dominance, their knowledge of the world is distorted. In contrast, women, being subject to domination, have a less distorted social experience that has the potential to produce less distorted knowledge claims (Williams and May, 1996). But what counts as knowledge is also chal- lenged. Attempts at rational or objective approaches to research are seen as the remit of male researchers, reflecting and prioritizing male values. In contrast, women have access to a deeper reality through their personal experiences (of oppression), and through their feelings and emotions.

***Postmodernism***

Postmodernism is far from being a unified system of thought and is sometimes used interchangeably with concepts such as deconstructionism and post- structuralism. Emerging from the disillusionment of French intellectuals with Marxism after the events of 1968, postmodernism was not just an attack on positivism, but on the entire historical agenda of modernity – and particularly Marxism (Delanty, 1997). Postmodernism rejects any notion of social ‘emancipation’, emphasizing instead multiplicity, ambiguity, ambivalence and fragmentation. Whereas philosophers such as Habermas had seen fragmentation in negative terms and as a threat to communication, postmodernism views it quite positively as an opportunity for choice. Hence postmodern analysis often focuses on themes within advertising, lifestyles, fashion, subcultures and gender.

In terms of research, the primary task becomes the deconstruction of texts to

expose how values and interests are embedded within them (Williams and May, 1996). The focus becomes not one of how these texts describe the ‘reality’ of the world, but how the social world becomes represented, and how meanings are produced. Texts are therefore seen as social practices, embedded with multiple values and vested

interests, not the reporting of independent, objective judgements. As we have seen, in contrast to other epistemologies, postmodernism stresses a *becoming* ontology.

**RESEARCH METHODOLOGIES**

We have examined, briefly, the significance of both epistemology and theoretical perspectives in research design. Let us now look at applying these in practice by exploring some of the alternative research methodologies.The choice of research methodology is determined by a combination of several factors – for example, whether the researcher believes that there is some sort of external ‘truth’ out there that needs discovering, or whether the task of research is to explore and unpick people’s multiple perspectives in natural, field settings. It is influenced, then, by whether the research is inclined towards a positivist, interpretivist, or other per- spective. It will also be influenced, for example, by the researcher’s attitude towards the ways in which she or he thinks theory should be used – whether research should begin with a theoretical model or perspective (deductive approach) or whether such models should emerge from the data itself (inductively).

In examining each of the following research methodologies (selected to

illustrate a range of approaches), pause each time to consider whether you think each is inclined towards a more ‘being’ or ‘becoming’ ontology. A Case Study is provided for each methodology to help you.

***Experimental and quasi-experimental research***

In classical, scientific experiments, subjects are randomly assigned to either an experimental or a control group.The experimental group receives the ‘treatment’ and the results are compared with the control group that does not receive the treatment. In the real world, however, it is often not possible to conduct truly experimental research because it is difficult to find experimental and control groups that are closely matched in terms of key variables (such as age, gender, income, work grade, etc). Instead, a quasi-experimental design is used where the researcher, for example, has to take existing groups rather than drawing on ran- dom samples. Instead of trying to manipulate an independent variable, the researcher will often attempt to find groups of people who have experienced it in their own natural setting. An attempt is then made to compare the behaviour of this group with that of a similar group that has not experienced the event or phe- nomenon. In experimental and quasi-experimental research there is also the ten- dency to make use of hypotheses which the experiment seeks either to support or to refute. In other words, experimental research is usually deductive.

Experimental and quasi-experimental research then places an emphasis on:

* Reproducing the techniques of the laboratory experiment with highly structured methods.
* The generation of initial hypotheses.
* The control of variables.
* Accurate (quantitative) measurement of outcomes.
* Generalization from samples to similar populations.

|  |
| --- |
| **Case Study 2.2 Experimental research**  A global organization selling Internet hardware, software and services, has an exten- sive set of internal training programmes, each of which is formally assessed.The com- pany wants to reduce the size of the overall training budget through the use of e-learning, but is concerned as to whether learning through this mechanism is more effective, less effective or makes no difference. It is believed by the research team that e-learning will be marginally more effective – thus they have a working hypothesis. All 200 members of a representative sample are given a pre-test of their under- standing of a selected subject. Then, the subject is taught to 100 participants through traditional, classroom learning (the control group) and to the other 100 participants through a specially designed e-learning program (the experimental group). All employees are given a post-test, and the gain-scores (the differences  between the pre-test and post-test score) compared between the two groups. |

***Action research***

Action research involves close collaboration between researcher and practitioners, and places an emphasis on promoting change within an organization.While the emphasis is on seeking information on the attitudes and perspectives of practitioners in the field, the way in which data are collected may involve both quantitative and qualitative methods. The main action research medium, however, is the case study, or multiple case studies. In some research designs, both an experimental and a control case study may be used, so emulating the experimental approach. Action research then:

* Involves both researchers and practitioners (or practitioners as researchers within their own organization).
* Can be highly structured and involve the use of experimental and control groups used to test a hypothesis.
* Can also be quite unstructured and used inductively (and qualitatively).

|  |
| --- |
| **Case Study 2.3 Action research**  A group of 20 teachers provide intensive educational support to children with special educational, emotional and physical needs in four community schools.The educational attainment of the special needs children in these schools has remained depressingly low over time. The special needs teachers decide to undertake an action research study using their four schools as the experimental cohort and  *(Continued)* |

|  |
| --- |
| four other schools in the district as the control.Working collaboratively with their other teaching colleagues in the school, a series of ten ‘mould-breaking’ workshops are run in which issues are explored and new solutions formulated.These are pri- oritized and a number of solutions implemented in the second semester.The edu- cational attainment and other indicators are then calculated for the children from the four schools involved in the action research project, and compared to those of children in the other district schools (the control). |

***Analytical surveys***

These attempt to test a theory in the field through exploring the association between variables. Analytical surveys are highly structured and place an emphasis on the careful random selection of samples, so that the results can be generalized to other situations or contexts. On the other hand, the very tightness of the sur- vey structure may hinder the ability of respondents to provide illuminating infor- mation in a way that they would like.

Like the truly experimental approach, analytic surveys emphasize:

* A deductive approach.
* The identification of the research population.
* The drawing of a representative sample from the population.
* Control of variables.
* The generation of both qualitative and quantitative data.
* Generalizability of results.

|  |
| --- |
| **Case Study 2.4 Analytical surveys**  A government department is becoming increasingly concerned that the level of waste recycling by domestic households is not increasing despite a major publicity campaign and the provision of local amenities for recycling.The department com- missions a nationally based survey to explore for each household contacted:   * the level of recycling * attitudes to the environment * attitudes to recycling specific waste products * the size and location of the household * the convenience of recycling facilities available * the household income level * the number of people and children per house   The survey is constructed so that correlation levels (strength of relationships) between levels of recycling and the other variables can be calculated and analysed. The hypothesis being tested is that levels of recycling are strongly positively correlated  *(Continued)* |

|  |
| --- |
| with attitudes to the environment (determined through the collection of qualitative data) and moderately positively correlated with access to local recycling amenities. Hence, if the hypothesis is confirmed, government policy will focus on changing attitudes towards recycling rather than on the provision of more amenities. |

***Phenomenological research***

Phenomenology is a theoretical perspective that uses relatively unstructured methods of data collection. One of the advantages of phenomenology is that, because of its emphasis on the inductive collection of large amounts of data, it is more likely to pick up factors that were not part of the original research focus. It is also capable of producing ‘thick descriptions’ of people’s experiences or per- spectives within their natural settings. But it is often based upon quite small case studies giving rise to concerns about its generalizability to other situations. Also, because it is generally unstructured, phenomenological research may be difficult to replicate. Phenomenological research, then:

* + Emphasizes inductive logic.
  + Seeks the opinions and subjective accounts and interpretations of participants.
  + Relies on qualitative analysis of data.
  + Is not so much concerned with generalizations to larger populations, but with contextual description and analysis.

|  |
| --- |
| **Case Study 2.5 Phenomenological research**  A city police authority has spent three years conducting a ‘war’ on street solicit- ing in one of the city’s poorest areas. Since the legal crackdown has not had the desired result, the police authority decides that the problem needs to be under- stood before new solutions are tried. A research study is commissioned to find out why these women turn to prostitution, the attitudes of the local community to their activities, and what sort of clients seek the women’s services and where they come from.  Three female researchers rent a flat in the area for six months.They do not try to hide who they are or what they are doing, but nevertheless, manage to build up a rapport and trust with ten of the women. Sometimes this is through visiting their ‘pitches’ where they are working, at other times it is through chance meetings while shopping, in bars or the launderette.The researchers also take time to talk to local people about the issue, including local police officers, through casual conver- sations, rather than formal interviews. The team gathers data sets consisting of detailed personal biographies of the women, their own attitudes towards their work, and the range of problems and issues raised by members of the local com- munity. Having written these biographies, the researchers revisit the women to have the transcripts checked for accuracy. |

***Heuristic inquiry***

Heuristic inquiry is a process that begins with a question or a problem which the researcher tries to illuminate or find an answer to. The question itself is usually focused on an issue that has posed a *personal* problem and to which answers are required. It seeks, through open-ended inquiry, self-directed search and immer- sion in active experience, to ‘get inside’ the question by becoming one with it.

According to Moustakas (1990), one of the primary processes of heuristic research is self-dialogue in which the researcher enters into a conversation with the phenomenon and is questioned by it. It is hoped that the process will lead to self-discoveries, awareness and enhanced understanding. Through this, the researcher is able to develop the skills and ability to understand the problem itself and, in turn, to develop the understanding of others.

Philosophically, heuristic inquiry does not start from the premise that there is an external ‘objective’ truth to be discovered. In contrast, it starts phenomeno- logically from the belief that understanding grows out of direct human experi- ence and can only be discovered initially through self-inquiry. Heuristic research, then, is autobiographical, providing for a deep, personal analysis. It is richly descriptive, but also strongly subjective, and weak in terms of generalizability.

Heuristic research, then, involves the researcher in:

* A deep personal questioning of what it is they wish to research.
* Living, sleeping and merging with the research question.
* Allowing inner workings of intuition to extend understanding of the question.
* Reviewing all the data from personal experiences to identify tacit meanings.
* Forming a creative synthesis, including ideas for and against a proposition.

|  |
| --- |
| **Case Study 2.6 Heuristic research**  The Operations Director of a company finds that he is passed over for promotion to Chief Executive for the third time. In an attempt to understand why this has occurred, he approaches the Chairperson, who has been largely responsible for this decision and asks if she will join him in a heuristic research project to uncover the reasons behind the decision.At first, the Chairperson is reluctant because she thinks (rightly) that the process will reveal some of her confidential thoughts. But she eventually agrees because she realizes that the process of working together might articulate for her the personal qualities she is seeking in a Chief Executive.  The Operations Director, who acts as the researcher, begins with a deep per- sonal reflection on what he wants to achieve in the research.Then, through a series of open and frank discussions with the Chairperson, he works through his feelings towards his current role, his successes and failures in numerous projects, his expec- tations of the Chairperson and her expectations of him. Over a period of five meetings he begins to understand that the blockage is not based upon prejudice, but on a feeling (shared by other members of the Board), that he is an excellent Operations Director, but lacks the *strategic* vision to be the Chief Executive.Through a process of explication (the full examination of awakened consciousness), he begins to realize that this analysis is probably correct. |

|  |  |
| --- | --- |
| **Activity 2.2** |  |
| Examine the range of research methodologies outlined above. Select one methodology that you think could be valid for your own research uses and one that is inappropriate. Justify your choices. | |

**SELECTING RESEARCH APPROACHES AND STRATEGIES**

In this chapter we have examined some of the philosophies of research, two approaches to research (inductive and deductive) and, within the context of truth and perspective-seeking objectives, some research methodologies (exper- imental, survey, phenomenological, etc.). We now need to put these together within a coherent framework (or as near to one as we can get) and to add a time horizon and data collection methods. Notice that data collection meth- ods are being discussed last (see Figure 2.2). Novice researchers may be tempted to begin with the design, say, of a questionnaire, so that data can be gathered without delay, but Figure 2.2 shows that other stages must be consid- ered first.

Epistemology

Sampling Secondary data Observation Interviews Questionnaires Unobtrusive measures

Cross sectional

Longitudinal

Grounded theory

Ethnograpy Heuristic inquiry

Case study

Experiment Action

Survey research

Inductive

Deductive

Interpretivism

Positivism

Objectivism Constructivism Subjectivism

Theoretical perspective Research approach

Research methodology

Timeframe

Data collection methods

**FIGURE 2.2** THE ELEMENTS OF THE RESEARCH PROCESS (ADAPTED FROM SAUNDERS ET AL., 2000)

***Connecting the research elements***

As we saw earlier, it is wise to start by considering epistemology. At first sight, this might seem rather irrelevant. But your approach to research and the research methods that you use will be influenced by whether you think it is possible (or desirable) to try to measure an objective ‘truth’, or whether you think that the real world cannot be measured in this way. As we have seen, the theoretical perspec- tive of interpretivism sees the world as too complex to be reduced to a set of observable ‘laws’. Generalizability is less important than understanding the real workings behind ‘reality’. With your research topic in mind, you will probably have a view as to whether you want to measure and generalize to a larger popu- lation or to seek ‘thick descriptions’, through the collection of qualitative data. Alternatively, your approach might include elements of both. Hence, Figure 2.2 does not illustrate a dividing wall between epistemologies and perspectives, but a gradual shading of one into the other.

We also have access to a range of research methodologies. Figure 2.2 delib-

erately shows the experimental methodology beneath the deductive/positivism side of the diagram. Conversely, action research has been placed more towards inductive/interpretivism. But it is dangerous to categorize research methodologies against specific approaches and philosophies. Action research, for example, can incorporate a qualitative, inductive approach with an emphasis on seeking the views and perspectives of participants. Equally, it can use, say, a series of case studies involving an intervention with a number of groups, with others used as a control – in other words, an experimental methodology. Figure 2.2, then, illus- trates some broad tendencies that should not be interpreted as concrete relation- ships.What is important, is that whatever philosophy, approach and methodology you adopt for your research, you should be able to justify your mix in relation to your research philosophy and research question(s).

Note that we come to the choice of data collection methods last of all.This

is not because the choice is unimportant, but because it is impossible to make one until we have a clear perspective on philosophy, approach and methodology.While claims have sometimes been made that one data collection method or another is more applicable to a particular methodology or research philosophy, in fact, they should be regarded as independent.

***Timeframes for research***

In planning your research you will usually have some sort of idea as to the timescales you have available to you. If these are short-term, then you will prob- ably have to adopt a *cross-sectional study* using a ‘snapshot’ approach where the data are collected at one point in time. Cross-sectional studies often use a survey methodology. For example, they might seek to measure staff attitudes towards the introduction of new working practices, or to compare crime rates for particular types of crime between different cities. Most research studies are cross-sectional, mainly because of the pressure of time and resources.

If your timescales are more generous, it may be possible to undertake a *longitudinal study*, to study change and development over time.Taking our example above, a longitudinal study of working practices might examine changes in staff attitudes over time, looking at attitudes before the introduction of new working practices, and then at various periods afterwards. Similarly, crime rates can be stud- ied to identify where rates are falling and rising. This might allow researchers to begin to identify explanatory factors such as demographic changes, social condi- tions and policing methods.

***Exploratory, descriptive and explanatory studies***

While we have so far classified studies by their research methodology, they can also be classified according to their purpose. As Robson (1993) explains, there are three possible forms of study: exploratory, descriptive and explanatory.

**Exploratory studies**

As the name suggests, exploratory studies seek to explore what is happening and to ask questions about it.They are particularly useful when not enough is known about a phenomenon. An exploratory study, then, may help to decide whether it is worth researching the issue or not.As Saunders et al. (2000) suggest, exploratory studies can be conducted by:

* A search of the literature.
* Talking to experts in the field.
* Conducting focus group interviews.

**Descriptive studies**

According to Hedrick et al. (1993), the purpose of a descriptive study is to pro- vide a picture of a phenomenon as it naturally occurs.This may, indeed, by purely descriptive (for example, the level and nature of crime among 16–21-year-olds). But it may also comprise a normative study, comparing the data against some standard (for example, comparing drug use against legal standards of drug classifi- cation to gauge the seriousness of crime).

**Explanatory studies**

Some studies can also be correlative in nature, with the emphasis on discovering causal relationships between variables. So we could determine the relationship between drug use and other variables such as social class, employment, attitudes to drugs etc.

***Using multiple methods***

Much of the discussion so far has tended to offer a dichotomy of approaches – inductive or deductive, experimental or case study, cross-sectional or longitudinal. In practice, however, it is often the case that multiple methods will be used. One reason is that research projects usually include a number of different research questions, so a research method appropriate for one question may be inappropri- ate for another. The second reason for using multiple methods is that it enables *triangulation* to be used. Easterby-Smith et al. (1991) refer to data triangulation as the collecting of data over different times or from different sources.This approach is typical of cross-sectional designs. Methodological triangulation is also possible, with the use of a combination of methods such as case studies, interviews and sur- veys. All methods have their strengths and weaknesses. So not only does the use of multiple methods assist in data triangulation, it helps to balance out any of the potential weaknesses in each data collection method. But whichever methods are used, in the final analysis Oakley’s argument is sound: ‘*all* methods must be open, consistently applied and replicable by others’ (1999: 252, original emphasis).

|  |
| --- |
| **SUMMARY**   * The dominant research paradigm for much of the twentieth century was positivism, but, today, at least in the social sciences, this has been largely replaced by anti- positivist or post-positivist stances such as interpretivism. * Approaches to research include both truth-seeking and perspective-seeking meth- ods. Truth-seeking methods tend to adopt more experimental or quasi-experimental approaches. Perspective-seeking methods tend to be more interpretivist (for example, phenomenological) and to generate qualitative data. These relationships should be treated as tendencies rather than as laws. * Selecting approaches to research involves adopting a research philosophy, and an   appropriate research approach and methodology. In practice, research often neces- sitates the use of multiple methods to achieve triangulation. |

**Further reading**

Crotty, M. (1998) *The Foundation of Social Research: Meaning and Perspectives in the Research Process*. London: Sage. Provides a very read- able description and explanation of the major epistemological stances and how they originated.

*(Continued)*

Cohen, L. and Manion, L. (1997) *Research Methods in Education*, 4th edn. London: Routledge. See especially Chapter 1 on The Nature of Inquiry.

Reinharz, S. (1992) *Feminist Methods in Social Research*. New York: Oxford University Press. Covers approaches such as ethnography, survey research, experimental research, case studies and action research, all from a feminist perspective.

Scheurich, J.J. (1997) *Research Methods in the Postmodern*. London: Falmer. Provides an introduction to how postmodernism can be applied to critiquing a wide range of approaches to research, and describes the implications of post- modernism for practice.

**Selecting and Planning Good Research Projects**

**3**

**Chapter objectives**

**After reading this chapter you will be able to:**

* + **Generate new ideas for research.**
  + **Identify a good research topic using selected criteria.**
  + **Write a proposal for the research project.**
  + **Plan the research project and data collection.**
  + **Gain the access you need to data.**
  + **Conduct research in an ethical manner.**

Having read Chapters 1 and 2, you should now have a clearer idea about the methodologies, approaches and tools that are essential for the design and imple- mentation of a good research topic. The question remains, of course, what *is* a good research topic? Generally, research projects can be designed as part of an aca- demic programme of study, or as a result of a business or organizational need. While the former will probably require a stronger element of theoretical under- pinning, both will need a sharp, practical focus or application. The outputs from research projects not only have potential benefits for organizations and their manage- ment, they can also be a vital element in personal learning and development. Clearly, the best approach is to select a research topic that interests you, and one that is likely to maintain your interest. The research process can be a long and arduous one, so you need to be committed to your subject.Winkler and McCuen (1985) suggest that you also need to select a subject area that has sufficient scope to generate several research projects. So, for example, investigating how a particu- lar commodity is produced at source and shipped to a retail outlet may not prove particularly illuminating. On the other hand, a study of supply logistics in general may offer greater scope for the research process, the range of literature to be con- sulted and the value of the research outcomes.

If you find you have difficulty finding a research subject, then talk to

colleagues at work to see what sort of issues concern them. Discuss the matter with your academic supervisor or line manager. Other useful sources are professional

journals and magazines that often contain articles on issues that are currently engaging the minds of business, commerce, public sector and voluntary organiza- tions.You might also browse through the business or management sections of your local bookshop to see what kinds of titles are being published. Some more practi- cal suggestions for generating ideas are given in this chapter. Some advice is also given on how to select a research topic and on how to write a successful proposal for your research. It also suggests how you can plan a schedule for conducting your research and how you should carry out the project, not only efficiently, but ethically.

**SELECTING A RESEARCH TOPIC**

You may already have a research topic in mind and hence want to use this section as a means of checking its validity. Alternatively, you may have been com- missioned by your organization to undertake a specific piece of research. In the latter case, do not feel that you should be a passive recipient of such projects. Make use of the criteria in this section to evaluate and renegotiate the focus of your pro- ject if you feel that this is necessary.

***When to select a research topic***

Obviously, this is going to be a matter of individual choice. Some researchers have a very clear idea and focus at an early stage. Indeed, they may have embarked on a programme of study precisely because they want to tackle a specific end pro- ject. For others, and probably the majority, a research topic emerges only towards the end of the study programme, or as a result of an emerging problem in the workplace. For some, the problem may be making a choice between a number of potential topics; for others, there may be only one focus.

***Sources of research topics***

There are, essentially, two ways of identifying a research topic. One is through the literature – books and academic and professional journals – which may raise inter- esting themes and topics that can be related to your own organization.The other route is directly from the workplace or community setting. Line managers, super- visors or project teams may all require assistance, and this can often be a fruitful source of research focus. In effect, the researcher then acts as a kind of internal consultant to a project team.

***What is a good research topic?***

Whatever topic you choose, it is likely that you will begin to develop or enhance a range of personal skills. A good topic, then, is one that gives you free rein to

maximize this self-development. Jankowicz (1991) argues that such personal development might include:

* Improving personal time management.
* Gaining access to respondents.
* Interviewing respondents.
* Speaking to an audience.
* Persuading people to cooperate.
* Dealing with uncertainty about data.

But it must also be a subject that interests you. Since research may involve many hours of planning, execution, data analysis and report writing, you will quickly tire of any topic that you thought was only moderately interesting at the outset. It is also a good idea to choose a subject that allows you to demon- strate your skills and abilities. Hence, if, say, you are undertaking a project at the end of an academic programme, you will need to select a subject that gives you scope for showing the integration of various fields of knowledge and analysis.Within the workplace, being able to demonstrate the skills of planning, data analysis and report writing can enhance your prestige and even promo- tional opportunities.

**Academic requirements**

You must ensure that the research subject is capable of meeting academic require- ments if you are undertaking a programme of study. As Raimond (1993) suggests, be sure that your topic is capable of being linked to the appropriate academic theory. Management theory, for example, tends to evolve and change quite quickly. Textbooks, however, can take years to write and are often out of date by the time they are published. One solution is to look at the academic journals (many of which are now online), which tend to be more topical.

**Access**

You will need access to relevant information, material and data. If you select an issue where these are lacking, you have little chance of completing the project. Remember that some issues in organizations, communities or networks are sen- sitive or confidential, for example, some financial data, redundancy plans, attitudes within a community, etc. Indeed, Flick (1998) warns that a research project is an intrusion into the life of an institution and is inherently unsettling for it. Apart from written or Web-based information, one of the essential elements of research is access to people. Who will you need to meet (perhaps to interview) and how busy are they? A classic contradiction is that the more important your project (to the organization), the more likely it is that the people you need to see are senior in the organization, and too busy to spare the time to be interviewed. The chal- lenge is to gain access to these people despite this. In community settings, the researcher may be seen as an intruder or outsider.

Line manager

External contacts

Mentor

**Researcher**

Organizational

infrastructure

Sponsor or client

**FIGURE 3.1** ORGANIZATIONAL SPONSORSHIP AND SUPPORT NETWORKS

**Sponsorship and networking**

It helps if you have a sponsor or client who can give you either financial backing, or at least moral or practical support.The latter might involve ‘opening doors’ in the organization and facilitating your access to people with information. Figure 3.1 shows the kind of networks that may exist, or which you may request are esta- blished, to provide you with assistance. Note that not all elements of this network are necessarily connected.They all perform different roles, so you need to under- stand or negotiate what each can offer you.

|  |  |
| --- | --- |
| **Activity 3.1** |  |
| Make a list of the support networks available to you. Are they readily accessi- ble? Are they sufficient? | |

**Time available**

Be sure that the research can be completed within the time available. There is always a tendency to underestimate the time needed for a project. Further diffi- culties may arise if the topic chosen is dependent upon the implementation of another project within the organization. If this project becomes delayed (which is often the case), or abandoned, then your research project may quickly reach an impasse. The best approach is to draw up a research plan before starting the project, with clear indications of dependencies and potential bottlenecks (see Figure 3.3).

Unfamiliar

|  |  |
| --- | --- |
| Unfamiliar work Familiar knowledge | Unfamiliar work Unfamiliar knowledge |
| Familiar work Familiar knowledge | Familiar work Unfamiliar knowledge |

Familiar Unfamiliar

**Work area**

Familiar

**Knowledge area**

**FIGURE 3.2** JOHARI WINDOW SHOWING CHOICES BETWEEN FAMILIAR AND UNFAMILIAR WORK EXPERIENCE AND PERSONAL KNOWLEDGE

**Capabilities and experience**

This may seem obvious, but selecting an issue that is within your capabilities is essential. Your skills will, hopefully, develop during the course of the research process; but, say, choosing a topic that requires robust statistical skills when you are comfortable with only basic mathematics may be a recipe for disaster. Experience may be a different matter. As the Johari window in Figure 3.2 shows, you can choose projects that are congruent with both your work area and experience (the safe approach), or, moving towards the top-right side of the diagram, beyond both your work and current knowledge set.This poses greater risks, but also enhances opportunities for personal development. Moving the project into an unfamiliar work area may also provide opportunities for networking amongst new groups of people which can be advantageous for both the project and your own professional future (including your future as a researcher).

|  |  |
| --- | --- |
| **Activity 3.2** |  |
| Take the project that you intend to do, or one or more projects that you are considering. Locate the position of the project(s) within the Johari window. How risky is the project, and are the risks worth taking? How ‘stretching’ is the project and is such development a personal objective? | |

**Value of the project**

Projects that have value to the organization (say, in terms of identifying cost savings, new marketing opportunities, IT strategies, etc.) will have a much greater chance of success than those that merely re-plough old ground. Innovative, pro- voking and original projects have a better chance of sponsorship and support from within the organization (at the appropriate level), of opening new networks for meeting and interviewing people, and of eventual implementation. A high value project is also more likely to motivate both you and your line manager or spon- sor. But ambitious projects may be more difficult to manage and complete. Sometimes, a more modest project may be both more feasible and achievable.

**Symmetry of potential outcomes**

Gill and Johnson (1997) suggest that one way of reducing the risks involved in a pro- ject is to achieve symmetry of potential outcomes.This means that, no matter what the results are, they will be useful. For example, a project to examine whether the company’s e-commerce website produced any increase in overall sales would be sig- nificant whatever the outcome. Conversely, a project that examined the relationship between levels of stress and output levels amongst line workers would be interesting if strong correlations were found, but would be of little value if they were not.

**Career goals**

You may consider whether the research topic may be of value to you in the future in terms of your personal career development.The research may make you an ‘expert’ in a particular subject or area, and enhance your value as an internal consultant.

***Generating research ideas***

If you are devoid of ideas for a topic, how can you create some imaginative ones? Table 3.1 suggests that new ideas can be generated either through rational or crea- tive processes. Let us look at each of these in turn.

**Examining your own strengths and weaknesses**

You will benefit from choosing a topic that you enjoy and for which you have probably received good marks for previous assignments and other course assess- ments, or positive feedback from a work-based project. Why not make a list of your strengths and weaknesses. Get a friend or colleague to critique the list (pre- pare yourself for a shock!), then amend it as necessary.

**Looking at past projects**

This is often a useful way of generating new ideas. A glance towards the end of some projects may reveal a section entitled ‘Suggestions for future research’ that

**TABLE 3.1** TECHNIQUES FOR GENERATING AND REFINING RESEARCH IDEAS

**Rational thinking Creative thinking**

Examining your own strengths and Brainstorming weaknesses

Looking at past projects Exploring personal preferences using past projects

Searching the literature Relevance trees

Discussion Keeping a notebook

SWOT analysis

*Source*: Adapted from Saunders et al., 2000

may be helpful.There may also be a bibliography which could prove a useful starting point for your own research – although take care that the references are not too dated. Also note that some universities and colleges place *all* theses and disser- tations in the library. Their presence there, then, is not a necessary guide to their quality.

**Searching the literature**

The literature includes articles in the academic journals, reports, books and web- sites (although be wary of the authenticity and quality of the latter). Becoming aware through the literature of the significance of some issues, or new angles on old ones, can be a stimulus to undertake research in how these ideas can affect your own organization. More detail on reviewing the literature is provided later in this chapter.

**Exploring personal preferences using past projects**

Here, you simply take a look at the subjects you have chosen for previous mod- ules, programmes or work projects, and identify the kinds of topic areas you have selected.This may be a guide to what you are generally interested in.

**Discussion**

Ideas might be generated by talking to fellow students, work colleagues, line man- agers, university tutors, practitioners and professional networks (the latter, possi- bly, through online discussion groups).

**Brainstorming**

This is a well-known problem-solving technique for generating and refining ideas. Jarvis (1995) suggests that the quantity of ideas produced by the brain- storming group is more important than the quality. All points made by partici- pants are recorded (for example, on a flipchart) over a mutually agreed period of time. No member of the group may criticize the ideas of another, irrespective

of how ridiculous some ideas may sound, since this would inhibit discussion. At the end of the agreed time period, the group discusses and selects from the points raised.

**Relevance trees**

This is similar to mind mapping, where you start with a broad concept from which you generate more specific topics. From each of these branches, new sub- branches can be generated. Do this quickly with an emphasis on generating ideas rather than evaluating them for quality. Once the process is finished, look over your material and evaluate the results.

**Keeping a notebook of ideas**

This simply involves noting down any new ideas as and when they occur. It is best to keep the notebook with you at all times.This could be a section in a research log book (see Managing information, p. 46).

**SWOT analysis**

SWOT stands for Strengths, Weaknesses, Opportunities and Threats. Using this well-known method, you could make a list of ideas under each of these cate- gories. SWOT analysis usually works best, however, when undertaken by a group since good ideas tend to generate others.

|  |  |
| --- | --- |
| **Activity 3.3** |  |
| Begin the process of generating ideas for your project. Note down fresh ideas as they occur. This may be when reading the literature, talking to people at work, or talking to people undertaking a similar programme of study. At some point, you may chose to carry out a SWOT analysis on each subject to see which of them has the most potential. | |

**TOPICS TO AVOID**

It is often only possible in retrospect to recognize the topic you should not even have attempted! However, here are a few hints that may help you to avoid the research disaster.The topics to avoid are those that are:

* *Too big*. For example, ‘Human resource management – innovative inter- national perspectives’. Some very large projects can be worthy and valuable to an organization, but you need to ask yourself whether you have the time,

experience and resources to complete them.Winkler and McCuen (1985) also warn that the big topic is also the most difficult to write about: it is difficult knowing where to begin, and omissions and oversights are more crudely exposed.

* *Traced to a single source.* This may not be a particular problem in pure business

research when a single solution is needed to a problem. However, if the research is linked to an academic programme of study, or important for your own professional development, there will usually be a requirement that issues are explored from a variety of different angles.

* *Too trivial*.This may seem rather subjective, but you should use your common

sense to evaluate the kinds of projects that are worth doing and those that are not.As a general rule of thumb try using the ‘So what?’ test. Ask yourself, after completing the research, whether the results have any meaning or significance (to others not just to yourself). For example, a research project that surveyed how to reduce the use of paper in a marketing department of ten people would yield very little of value. On the other hand, a project that took the issue of recycling (paper, printer cartridges, furniture, computers, etc.) across an organization could have considerable scope and link into the broader envi- ronmental debate.

* *Lacking in resource materials*. Look out for warning signs – very few references

to the topic in the main textbooks, practitioner journals or other refereed journals or websites. If the project is going to rely on access to in-house knowledge experts, make sure (in advance) that they are both available and willing to cooperate with you.

* *Lacking in sponsorship*.This does not necessarily mean financial sponsorship, but

it is often important to obtain the support and commitment of key people in the organization or fieldwork setting where the research is taking place.These are likely to be directors, senior managers, or the leaders of networks or groups.

* *Too technical*. Some projects are more concerned with solving highly technical

problems rather than organizational research. Leave these to the technical gurus.

* *Intractable*. You may be offered a problem that nobody else has been able to solve. Be highly suspicious of this kind of gift! Ask yourself:‘Why me?’ It may be an offer you need to refuse.
* *Dependent on the completion of another project*. Even if you are ‘guaranteed’ that projects you hope to use as data sources will be completed in time for your use, you are strongly advised not to make your own project dependent on them. If slippage occurs, your own research will be held up or even scrapped.
* *Unethical*. Avoid taking on projects that can damage other people physically, emotionally or intellectually. Refuse to take on a project that forces you to breach confidentiality or trust.When using interviews, observation or surveys, you will need to pay particular attention to politically sensitive issues such as power relationships, race, gender and the disclosure of personal information. Ethics are discussed in more detail at the end of this chapter and elsewhere in this book.

|  |  |
| --- | --- |
| **Activity 3.4** |  |
| Consider each of the following ‘big’ topics and formulate a more focused, narrower research project from each of them:   * Communication in the workplace * Mergers and acquisitions * Health and safety * Teenage pregnancies * Equal employment legislation | |

**PLANNING THE PROJECT**

It may seem obvious that all research projects should be carefully planned, but it is surprising how many researchers rush forward into data collection without a plan of campaign. Disaster is the inevitable result. Planning also helps with time management, one of the greatest problems when work and research commitments compete.There are many ways of planning a project and presenting the plan. One technique is to make use of a table, which sets out the tasks and the planned dates for their completion. A better approach is through the use of a Gantt chart (see Figure 3.3) through which you not only specify tasks but whether they are going to be completed in sequence or in parallel. Project management software such as *Microsoft Project* not only generates various graphics such as Gantt charts, but also allows you to specify timescales for the completion of each task.

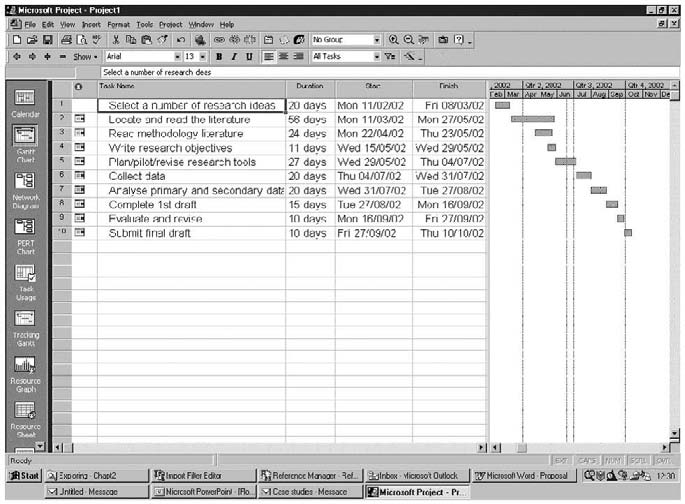
**LOCATING THE LITERATURE**

This is not simply a sequential process of first finding the literature that you need and then reviewing it. As we shall see, it is more usual for this to be an iterative process, with locating, reviewing and then more searching. There are, essentially, two main areas to be searched:

* The literature dealing with the subject of your research.
* The literature on research methodology and data collection methods.

The challenge is that there is so much information available. Table 3.2 offers a brief overview of some of the sources.

According to Hart (2001), the keys to conducting a successful search of the literature are: planning, understanding the ways in which information is organized and made available, maintaining records, and extracting information from useful sources, including the main arguments, theories, concepts and definitions.We will look at some of these issues in more detail. In doing so, various sources, primarily websites, will be mentioned.



**FIGURE 3.3** PLANNING SCHEDULE FOR A RESEARCH PROJECT USING MICROSOFT PROJECT

***Search planning***

At the outset you may have only a general notion of your research theme (for example, performance management in your company, the effectiveness of mixed ability teaching, public attitudes to the integration of schizophrenic patients into society).This is obviously where you will start. It may happen, however, that your reading takes you down a completely different path. This is acceptable, as long as it results in a coherent topic for your research. Alternatively, your initial theme may appear too wide (for example, brands in marketing), and through reading the relevant literature you may be able to focus on a specific area of the topic which is actually feasible to implement (for example, getting a new brand image accepted and promoted by an organization).

Planning the literature search is not like getting on a train and travelling from A to B.You may have a general intention of getting to B, but your route may involve several modes of transport (sources) and you may find yourself travelling sideways or sometimes backwards! Indeed, you may even decide when on your journey that you intend to travel to C instead! Planning, then, means aiming for a destination (even though this goal may change) and knowing where the modes of transport and timetables are. To modify Hart’s (2001) analogy of trawling and mining, the research process is about touring (looking around) and camping (stop- ping to explore in more depth), as Figure 3.4 shows. Notice that the travelling

**TABLE 3.2** AN OVERVIEW OF LITERATURE SOURCES

|  |  |  |
| --- | --- | --- |
| **Sources where research**  **and information is published** | **Sources and organizations providing publications** | **Tools for searching published works and data** |
| Textbooks | Academic libraries | Library catalogues |
| Articles | Public libraries | Subject indexes |
| Theses | National libraries | Subject abstracts |
| Government publications | Specialist libraries | Bibliographies |
| Legal and professional | Museums | Encyclopaedias |
| publications | Archives | Guides to the literature |
| Trade literature | Special collections | Internet directories |
| Conference papers | Political parties | Internet search engines |
| Monographs | Commercial organizations |  |
| Statistics | Trusts |  |
|  | Internet |  |
| *Source*: Adapted from Hart, 2001 |  |  |

process involves an enticing journey around the literature. But camping involves a more discriminating approach, selecting, synthesizing and analysing in more detail. By the end of the literature search journey, you will be familiar with the history of the subject, the key sources and authors, and methodological approaches, theories and findings. Above all, you will be familiar with the prob- lems, debates, arguments and uncertainties within the territory, and these should begin to clarify your own concerns, objectives and research focus.

***Managing information***

It is all too easy to be enthusiastic and motivated in searching the literature, but sloppy in storing your findings. Without an accurate, consistent and searchable means of storing your literature search data, your efforts will lack the reward that they deserve. The key is the maintenance of a research log. This can be paper- based or a computer file, depending on which you are most comfortable with. The research log could contain sections on:

* Search parameters – details of your main subject focus and the keywords that describe it.
* Search logs – information on what you have searched, when, how and with what results.
* Contact details of people, organizations, Internet newsgroups, online discus- sion groups, etc.
* Inter-library loans, including what you ordered and when.
* CD ROM and Internet sources.
* Bibliography.

Maintaining an accurate and searchable bibliography is important for a number of reasons. First, it means that you have a printable bibliographical record at the end of your research project. Secondly, keeping a searchable record allows

**Touring Camping Touring Camping Specifying and integrating**

Broad- based search for books and articles

Focused research

Broad search for grey literature

Focusing

History of the topic

Key works and authors Debates and arguments Methodological assumptions

Theories and concepts Findings

Critiques

Selecting possibly relevant items

Reading, analysing and discriminating between items

Analysing and categorizing contents

Integrating and synthesizing contents

**FIGURE 3.4** TOURING AND CAMPING TO ACQUIRE, ANALYSE AND SYNTHE- SIZE INFORMATION (ADAPTED FROM HART, 2001)

you to locate all your references on specific issues (topics, authors, dates of publi- cation etc.) when you are writing up your research. This is much easier to carry out if you maintain computerized records. There are a number of bibliographic software products on the market that allow you to store records in a database, cre- ate bibliographies and even conduct Internet searches of online and Web databases.

|  |  |
| --- | --- |
| **Activity 3.5** |  |
| You can download trial versions of two bibliographic software products from the Adeptscience website at:  [http://www.adeptscience.co.uk](http://www.adeptscience.co.uk/)  Look for Reference Manager and EndNote.  For the specifications of the two applications see: <http://www.lib.ucdavis.edu/healthsci/win-bibmanagers.html>  For a tutorial on using Reference Manager see: <http://www.ion.ucl.ac.uk/library/rm.htm>  For a tutorial on using EndNote see: <http://www.endnote.com/support/en4tutorial.asp> | |

***Locating reference materials***

There is no strict order in which you have to locate source materials. Creswell (1994), however, suggests that the following order is helpful:

* *Journal articles.* But ensure that you concentrate on peer-reviewed journals. This is not to say that you should always avoid, say, professional magazines or periodicals. Articles in credible journals, however, are scrutinized for their rel- evance, originality and validity by other academic researchers. Hence, the quality and reliability of such articles, while not guaranteed, is more assured.
* *Books.* Begin with research monographs that are summaries of the academic literature on a particular subject. Then look at complete books on a single topic or ones that contain chapters written by different authors. Note, how- ever, that textbooks quickly become dated, so it is best to use them in con- junction with other sources.
* *Conference papers.* These often contain the most up-to-date information and developments in research.

In contrast, Hart (2001) advises that the best start is delving into a library’s quick reference section, where you can find sources such as guides to the literature, dictionaries, directories and encyclopaedias.After this, the focus becomes one of using books and bibliographies in more detail. Clearly, there are alternative approaches! Try dipping into the reference sources and see what you find the most rewarding.

**Books**

The main source for locating relevant books is the Online Public Access Catalogue (OPAC) of a library.These can usually be searched by subject, author, title and key words.They also often offer access to other online catalogues, and gateways. Using the Internet, you can access libraries across the world, as the next Activity shows.

|  |  |
| --- | --- |
| **Activity 3.6** |  |
| Access the BUBL Link public access catalogues and locate the online public catalogues in your own country at:  <http://link.bubl.ac.uk/libraryopacs/>  Another source of useful information is Amazon, which not only sells books but also often provides descriptions of their contents. See: [http://www.amazon.co.uk](http://www.amazon.co.uk/) | |

When browsing in a library or bookshop, a useful evaluation procedure for deciding on whether a book is worth borrowing or purchasing is to look at a number of features, including the:

* Title and subtitle – are they relevant?
* Preface – does it cover your subject area or at least an element of it, and is it at the right level?
* Contents list – does it offer material on your topic?
* Publisher – is the organization respected for publishing quality texts in your field?
* Bibliography – is there one, and do the references look familiar, at the appro- priate level and ‘on topic’?

**Bibliographic services**

Bibliographies are gigantic databases of what is in print and what has been printed, and can be used for locating sources on topics or by specific authors.Take a look at two major national bibliographies in the next Activity.

Explore and evaluate the bibliographic services of the British Library at: <http://www.bl.uk/services/bibliographic.html>

Also take a look at the National Union Catalogue of Manuscript Collections at: <http://leweb.loc.gov/coll/nucmc/nucmc.html>

**Activity 3.7**

**Journal articles**

There are, essentially, two types of journal article: academic articles written in peer-reviewed journals, and articles published in professional journals (that are not usually peer-reviewed).The articles you need can be accessed through using either an indexing or abstracting tool. A keyword search of an index will give you a list of articles, authors, title of article, date of publication and journal title. Examining the article title or knowing the reputation of the author may allow you to evalu- ate whether the article is worth reading. Abstracting services, however, also give you a brief synthesis and summary of what the article is about, which is much more helpful. Since many (but unfortunately not all) journal articles are now pub- lished online, it may even be possible to access the article immediately and print it off (sometimes, however, this will depend on whether your institution sub- scribes to the journal title). Hart (2001) advises that it is best to search the multi- subject indexes and abstracts first, and subject-specific abstracts (if there are any) last. See the next Activity for an example of a multi-subject index and a subject- specific index.

|  |  |
| --- | --- |
| **Activity 3.8** |  |
| For examples of *multi-subject indexes* see:  The Cambridge Scientific Abstracts and look for Electronic Products at: <http://www.bhinet.co.uk/>  Catchword at <http://www.catchword.com/>  Ebsco online at <http://www-uk.ebsco.com/home/>  For a *subject-specific index* see:  ScienceDirect at: <http://www.sciencedirect.com/> | |

Many journals are now either being published in both paper-based and electronic format, or just as e-journals (the latter being increasingly the case). There are also a growing number of gateways to these e-journals that provide access to the full-text articles (either free of charge or for a subscription). Explore some of these very useful gateways in the next Activity.

|  |  |
| --- | --- |
| **Activity 3.9** |  |
| Take a look at the BUBL Journal collections at: <http://bubl.ac.uk/journals/>  And then at Ingenta journals at: [http://www.ingenta.com](http://www.ingenta.com/)  For a directory of electronic journals see: <http://arl.cni.org/scomm/edir/index.html> | |

**Grey literature**

This is the sort of published and unpublished material that cannot be identified through the usual bibliographic methods.A growing and significant example here are websites, but grey literature also includes academic theses and dissertations, newspaper and magazine articles, editorials, materials produced by business and trade journals, reports, and publications by clubs and societies.

|  |  |
| --- | --- |
| **Activity 3.10** |  |
| For a search engine providing access to technical grey literature see the Magic Project at:  <http://www.magic.ac.uk/>  Links to Internet sources on grey literature are at: <http://www.library.drexel.edu/netresources/subject/greylit.html> | |

**Official publications, statistics and archives**

These can be of enormous value to the researcher, but it will depend, of course, on the extent to which a government collects these kinds of data, and the level of access provided to the public. Of the kind of material that is available, an increas- ing amount is finding its way onto the Web. The next Activity provides links to some multi-subject gateways, sources for statistics and links to data archives.

|  |  |
| --- | --- |
| **Activity 3.11** |  |
| UK statistical sources can be found at: <http://www.statistics.gov.uk/>  European Commission statistics can be viewed at: <http://www.europa.eu.int/comm/eurostat/>  A source of data archives can be found at: <http://ssda.anu.edu.au/> <http://www.psr.keele.ac.uk/data.htm> | |

**Using citations and reviews**

A citation index records the references made in other works to an author or source. By examining the scale to which an author has been cited, you can quickly see who the acknowledged authorities are in a particular field. Citation indexes also provide reviews of books. Book reviews can also be found in abstracting ser- vices, in professional magazines and journals as well as in the academic journals.

|  |  |
| --- | --- |
| **Activity 3.12** |  |
| Point your Web browser to the Institute for Scientific Information (ISI) site at: <http://www.isinet.com/>  Find the Journal Citation Report on the Web, which provides access to statis- tical data to determine the relative importance of journals within their subject categories. | |

**Using authors**

Consider making use of networks to access literature sources. It you have been impressed with a particular author’s work, why not try contacting her or him? These days, many people are quite easy to locate through their organization’s web- site.You can ask them if they have published anything else in your field of interest, or if they are writing something new at the moment.You may be lucky enough to receive copies of articles, drafts of work in progress, or at least new references. On the other hand, they may be too busy to reply to you, so do not be disappointed!

**Joining professional associations**

You can join relevant professional associations, many of which publish their own professional journal, and hold conferences or seminars. Some even have their own libraries that can provide a rich source of material in the field.

**Using your organization**

Do not forget that you can also make use of your own organization as an impor- tant source of data.This will include internal documents. But note that the acad- emic literature should underpin the theoretical elements of the project. Using institutional or company documents is valid for providing background informa- tion and supporting detail, but they should not carry the main burden of the the- oretical argument or analysis.

**REVIEWING THE LITERATURE**

The critical review of the literature provides the foundations of your research. Not only does it inform and refine your research objectives (for example, are they topical, worthy of research, original?), it provides a benchmark against which you can compare and contrast your results. One of the features of any project is that it should enable you to demonstrate a critical awareness of the relevant knowl- edge in the field. A comprehensive review of the literature is essential because it:

* Provides an up-to-date understanding of the subject and its significance and structure.
* Identifies the kinds of research methods that have been used.
* Is informed by the views and research of experts in the field.
* Assists in the formulation of research topics, questions and direction.
* Provides a basis on which the subsequent research findings can be compared.

The literature review is not something you complete early in the project and then drop. It is likely to continue almost to the writing up stage, especially since your own research may generate new issues and ideas that you will want to relate to the literature. As we saw in Chapter 2, if you are adopting a deductive approach to your research, your literature review will help to provide a source for the focus of your research, including aims, objectives and hypotheses. Conversely, if you favour a more inductive approach, you may begin with the collection and analysis of data, a process that leads to questions that are then addressed through engagement with the literature.

***The critical review***

A review can involve a narrative or description of an article or other piece of work. A *critical* review, however, is much more than this and it is important to

**TABLE 3.3** SKILLS FOR CRITICAL ENGAGEMENT WITH THE LITERATURE

|  |  |  |
| --- | --- | --- |
| **Skill** | **Actions** | **Description** |
| Analysis | Select, differentiate, break up | Dissecting data into their constituent parts in order to determine the relationship between them |
| Synthesis | Integrate, combine, formulate, reorganize | Rearranging the elements derived from analysis to identify relationships |
| Comprehension | Understand, distinguish, explain | Interpreting and distinguishing between different types of data, theory and argument to describe the substance of an idea |
| Knowledge | Define, classify, describe, name | Describing the principles, uses and function of rules, methods and events |

*Source*: Adapted from Hart, 1998

understand the difference. Hart (1998) argues that a reading of the literature should pose questions such as:

* What is the purpose of the study?
* What is the focus of the study?
* What types of data were collected?
* How were the data managed?
* What analytical approach is used?
* How is validity addressed?
* How are ethical issues handled?

Operationalizing the issues listed above means using sets of tools to analyse and evaluate the literature. This means developing a complex set of skills, acquired through practice.Table 3.3 provides a brief overview of the types of skill involved.

In terms of structure, Creswell (1994) suggests that a literature review should comprise five components:

* An Introduction, informing the reader about how the review is to be orga- nized and structured.
* Review of Topic 1, addressing the literature on the independent variable or variables (the influences on the dependent variable or subject, upon which the research is focused). Note: we will explore descriptions of dependent and independent variables in more detail in Chapter 4.
* Review of Topic 2, the literature on the dependent variable. If there are mul- tiple dependent variables, devote a sub-section to each one, or focus on a sin- gle important dependent variable.
* Review of Topic 3, the literature that relates the independent variable to the dependent variable. Creswell warns that this section should be relatively short and should focus on studies that are extremely close in topic to the proposed study. If nothing specific has been written on the topic, then review studies that address it at a general level.
  + Provide a summary of the review, highlighting the most significant studies and the key themes that have emerged.

This last point is vitally important. It is not enough to simply read around a subject or theme.You must produce a synthesis of subjects or related subjects in the form of an increasingly *focused argument* or set of concerns (recall Figure 3.4). It is the difference between describing a menu – ‘first we tried the appetizers, then we ate the main course, after which we sampled the desserts’ – and producing the sort of *critical* evaluation of a restaurant’s fare that you would read in a gastronomic magazine. Within the five-step structure suggested above, any critical review should also incorporate:

* + An assessment of the strengths and weaknesses of some of these theories.
  + A clear understanding of the topic.
  + A citing of all key studies in the subject territory.
  + A clear indication of how the review links to your research questions.
  + A definition of the boundaries of your research.
  + A selection and synthesis of existing arguments to form a new perspective.
  + Through gradual refinement, a clear demarcation of the research problem.

The key word here is ‘refinement’. Recalling Figure 3.4, touring the literature, but also pausing to focus on areas that have emerged as important, means that the dis- cussion is gradually refined down to a set of core issues and arguments. These, then, provide the basis for the formulation of research questions and the focus of the research.

Hart (1998) warns that, in evaluating a piece of research, the researcher must be aware of the methodological tradition from which it emanates – even if the researcher is not sympathetic to that tradition. For example, it is not enough to criticize a quasi-experimental research study for taking a quantitative approach to data collection, since this is what one would expect. A more valid argument would be that the research design was not matched to the research objectives, or that assertions made for the study were insufficiently supported by the data or analysis.

***Positioning the literature review***

Should your review of the literature come at the beginning of your report or dis- sertation, in the middle or at the end? Creswell (1994) offers three possible locations: in the *Introduction*, as a *separate section* and as a *final section* in the study. Table 3.4 provides a brief summary. For some qualitative studies, for example, the literature can be discussed in the *Introduction* to ‘frame’ the subject being studied. Using a separate literature review section towards the beginning of a study is typical of a quantitative approach. The purpose of this section becomes to provide a basis on which questions and hypotheses can be based, and can influ- ence the design and direction of the research. In contrast, in some types of

**TABLE 3.4** RESEARCH METHOD AND USES OF THE LITERATURE

|  |  |  |
| --- | --- | --- |
| **Research method** | **Use of the literature** | **Comments** |
| Qualitative studies: all types | Used in Introduction to ‘frame’ the problem | Some literature must be available |
| Quantitative | Located as separate ‘review of the literature’ section at beginning of study | Helps to generate research questions and hypotheses; also used at end of study against which results compared |
| Qualitative: grounded | To compare and contrast | The literature does not guide or |
| theory | theories generated from the  data with theories in the literature | direct the study, but becomes an  aid once patterns emerge from the data |

*Source*: Adapted from Creswell, 1994

qualitative research, such as the use of grounded theory, theoretical perspectives are developed inductively from the data itself. Any literature review is created towards the end of the research, providing a benchmark against which the results can be compared.

**WRITING THE PROJECT PROPOSAL**

There are, essentially, two types of proposal:

* An **organizational** proposal, written to gain funding for a project or at least to elicit support and commitment from a project sponsor.
* An **academic** proposal, a plan for conducting research as part of an academic programme of study.

***Organizational proposals***

There are two main types of organizational proposal, comprising those that are written:

* In response to a request for proposals or ‘invitations to bid’ from, say, govern- ment agencies or companies.
* For submission to an internal organization or department, often in response to a request for help with a problem or a need to improve a product or service.

Whichever kind is written,White suggests that a proposal is a ‘sophisticated adver- tisement of approaches and abilities’ (1997: 218) and not just a description of how a project could be tackled.

**To bid or not to bid?**

Many proposals are written within tight timescales and in the knowledge that other individuals, teams or organizations are competing for the project. In deciding whether to respond to any request for proposals (RFPs), you will need to take a view of:

* + Whether you possess the necessary expertise to respond.
  + The number of bids you are competing against and the likely strength of opposing bids.
  + The number of bids that will be funded.
  + Whether all bids are to be fairly evaluated, or whether the process is possibly biased.

These criteria will help you to undertake a risk assessment, weighing up the prob- ability of success and the potential size of the funding if successful, against the time it will take to write the bid.

**Preparing to write the proposal**

Figure 3.5 illustrates a series of steps that should be observed in writing any pro- ject proposal.We will look in detail at each stage.

**Review the RFP specifications** Take another, careful, look at the request for proposals and make sure that they are complete, consistent and clear. Some RFPs may also contain information on how responses to each of the specifications will be scored – for example, some requirements may be more important to the pro- ject than others and receive a higher weighting. If anything in the RFP is unclear, then it is legitimate to contact the creators of the RFP (preferably in writing) and ask for clarification.

**Develop a plan of action** This should include a rationale for the project, the key research objectives and a plan of how these are to be met, that is to say, the research methodology. Take care to show that the project has value. To do this apply the invaluable ‘so what?’ test. This means looking at your proposed project outcomes and asking yourself to evaluate honestly whether they have any real worth in terms of practical application or contribution to knowledge.

**Determine the human resource requirements of the project** Those who com- missioned the proposal will be keen to evaluate not only the number of people committed to the project, but also their experience and qualifications. If any ele- ment of the project is going to be outsourced to a third party, then again, evidence should be provided of their ‘fitness for purpose’.

**Develop the project graphics** This will be particularly important for more technical projects, but should always be considered for research projects of any kind. Graphics, particularly flow diagrams showing how different elements of a project relate to one another, can be easy to read and understand. Ensure that if

**Step 4:** Develop project graphics

**Step 3:** Determine the human resourcing of the project

**Step 2:** Develop a plan of action

**Step 5:** Develop project schedule

**Step 6:** Develop project costs

**FIGURE 3. 5** PROPOSAL DEVELOPMENT FLOWCHART (ADAPTED FROM WHITE, 1997)

**Step 1:** Review the request for proposal specifications

graphics are used, there is a clear description provided in the text (such as the way in which this text is describing Figure 3.5).

**Develop a project schedule** A project schedule such as a Gantt chart (recall Figure 3.3) provides a list of the main project tasks and the dates for their comple- tion.These tasks could include arrangements for seeking permissions from an ethics committee, preliminary arrangements for getting research subjects, a timetable for constructing research tools, analysing data and writing the research report.

**Develop project costs** White (1997) warns that this is more an art than a sci- ence because there are so many variables to take into account. Particular care needs to be taken when estimating labour costs since these often eat up the bulk of a research project’s budget. Since the research process is rarely linear and smooth, it is prudent to add in some contingency costs in case unexpected results emerge that require further research. The less experienced the research team, or riskier the project, the higher the contingency costs should be. Given that com- missioning organizations are highly unlikely to pay for contingency costs, these will have to be built into (i.e. hidden!) in general costs. Of course, the higher your overall costs, the less competitive your bid.

**Preparing the final document**

In writing the final project proposal, try to ensure that the document is internally consistent, and that there are no gaps or contradictions between objectives and

research processes. Remember that once the proposal is submitted you are committed to it, so you need to ensure that all errors have been eliminated. It helps, then, to elicit the assistance of some experienced reviewers who should be asked to answer the following questions:

* + Is the proposal clear and understandable?
  + Is the proposal realistic?
  + Is the proposal consistent with the bid specifications?

Also, get an appropriate person to review the costings.White (1997) makes the use- ful suggestion that you should do a hand calculation of all columns and rows of finan- cial data, even if they were calculated by computer (in case a decimal point has slipped!).When you have finished the proposal, print it off and read it one more time.

**Success or failure?**

It is worth having a strategy in place for whether the bid is approved or rejected. If the latter,Williams (1996) offers the advice that you should try to get feedback on the proposal from those who have evaluated it.This may allow you to improve the bid if there are later opportunities for resubmitting it. If the bid is successful, you may be offered less funding than you asked for. At this point you need to decide whether to accept this funding, or, if possible, renegotiate the outputs of the project at a lower level.

***Academic proposals***

The structure of these proposals is normally specified by the academic institution. An example is given in Table 3.5, where you will note the weight given to acad- emic theory and underpinning.

**THE ETHICS OF RESEARCH**

We will deal with a wide range of ethical issues that are particular to specific research methods in later chapters. Here, we will examine some of the ethical considerations of more general significance. Ethics is a philosophical term derived from the Greek word *ethos*, which means character or custom. The ethics of research concern the appropriateness of the researcher’s behaviour in relation to the subjects of the research or those who are affected by it. Since research in the real world inevitably deals with people and the things that affect them, ethical issues can arise at the planning, implementation and reporting stages of research. Some ethical issues are obvious and a matter of courtesy and common sense but others are less clear. As Korac-Kakabadse et al. (2002) suggest, one of the chal- lenges of ethical behaviour is that it lies in a ‘grey zone’ where clear-cut dichotomies between what is right and wrong may not exist.

**TABLE 3.5** TYPICAL STRUCTURE FOR AN ACADEMIC PROPOSAL

**Section Contents**

Working title Describes the breadth and depth of the topic and gives an

indication of the methodology to be used (e.g. case study, evaluation, etc.)

Introduction (abstract) A summary of the research topic, describing the core problems or issues, the gaps in the research and how the research will address them

Aims General statements on intent and direction of the research Objectives Clear and measurable statements of intended outcomes Justification Rationale for the research with reference to gaps in current

knowledge, and potential application of results

Review of the literature Describes the history of the topic and key literature sources;

illustrates major issues and refines focus to indicate research questions (qualitative research) or hypothesis (quantitative research)

Methodology Justifies methodological approach, including data collection and analytical techniques; use of quantitative or qualitative methods; choice of research approach and paradigm; anticipation of ethical issues; how the data will be analysed

Work schedule A timetable for completing the research, indicating tasks and

timescales

References Bibliography of works cited in the proposal

Related material For example, letters of support for the research, agreement to collaborate from interested institutions

*Source*: Adapted from Hart, 1998

Ethical issues arise even at the initial access stage, where the ambitious researcher can unwittingly or otherwise put pressure on people to become par- ticipants. If you are a practitioner researcher conducting a project within your own professional context it may be especially tempting to cajole colleagues who may feel obliged to cooperate.The key to ethical involvement is not just obtain- ing consent but *informed* consent. This includes explaining to gatekeepers such as project sponsors and the participants:

* The aims of the research.
* Who will be undertaking it.
* Who is being asked to participate.
* What kind of information is being sought.
* How much of the participant’s time is required.
* That participation is voluntary.
* That responding to all questions is voluntary.
* Who will have access to the data once it is collected.
* How anonymity of respondents will be preserved.

Informed consent may be given through a verbal agreement, but a written state- ment is probably best. It is also important to keep participants informed if the aims of the research change during the project.

Professional researchers in the fields of sociology and psychology often have a set of ethical guidelines to adhere to, as do members of some professional asso- ciations or those working in professional contexts. In the UK health service, for example, many research ethics committees have been established, their work coor- dinated by the Central Office for Research Ethics Committees.Activity 3.13 pro- vides some useful websites that illustrate different sets of ethical guidelines.

|  |  |
| --- | --- |
| **Activity 3.13** |  |
| Compare and contrast the ethical principles stated at the following sites, not- ing any difference between codes of conduct for researchers and consultants.  American Psychological Association at: <http://www.apa.org/ethics/code.html>  British Educational Research Association at: <http://www.bera.ac.uk/guidelines.html>  Central Office for Research Ethics Committees at: <http://www.corec.org.uk/>  Institute of Management Consultants (see Ethics and Discipline, under ‘Our Standards’) at:  <http://www.imc.co.uk/index3.html> | |

Table 3.6 summarizes some of the ethical issues the researcher must be aware of and plan for. The following Case Study provides you with an opportu- nity to apply some of these principles, and illustrates some of the complexities of trying to adopt an ethical stance in ‘real world’ situations.

|  |
| --- |
| **Case Study 3.1 Ethical dilemmas in research**  A financial services company implements a new information technology system that gives e-mail capability to all employees, irrespective of grade.After 12 months, company directors are anxious to know if the investment is providing a financial payback. One indicator is whether the e-mail facility is improving inter-employee communication and general productivity. Hence, they want an analysis of e-mail traffic. An external researcher is commissioned to conduct the study.  She decides to use a blend of quantitative and qualitative methods. On the quantitative side, negotiating access to the information poses no problems, since all she has to do is contact the head of information services. Given that this is a legitimate  *(Continued)* |

**TABLE 3.6** A CHECKLIST OF ETHICAL ISSUES

**Ethical issue Description**

Privacy The right not to participate. The right to be contacted at reasonable times and to withdraw at any time

Promises and What do participants gain from cooperating with the research? If promises reciprocity are made (such as a copy of the final report) keep them

Risk assessment In what ways will the research put people under psychological stress, legal liabilities, ostracism by peers or others. Will there be political repercussions? How will you plan to deal with these risks?

Confidentiality What constitutes the kinds of reasonable promises of confidentiality that can be honoured in practice? Do not make promises that cannot be kept

Informed consent What kind of formal consent is necessary and how will it be obtained?

Data access and Who will have access to the data and who owns it? Make sure that this is ownership specified in any research contract

Researcher How will the researcher be affected by conducting the research? What mental health will they see or hear that may require debriefing or counselling?

Advice Who will the researcher use as a confidant(e) or counsellor on issues of ethics during the research?

*Source*: Adapted from Patton, 1990

|  |
| --- |
| company project, commissioned by the executive board, he is obliged to give the researcher free access to whatever information she requests.  For the qualitative side of the research she wants to interview a sample of 40 employees. Believing that imposing herself on these people would be unethical, she writes to all of them individually requesting access, and provides details of the pur- pose of the research, how the information is being collected, and who will read the final report. She had made a request to the executive board that she should be allowed to provide a summary of the final report to all respondents but this was refused. Despite her reassurances, only 12 of the original sample agree to being interviewed, most excusing themselves on the basis that they are too busy. One option would be to obtain an instruction from the managing director, ordering everyone to cooperate. She decides, however, that, not only would this be counter- productive, it would be unethical on a number of grounds not least because the responses would no longer be voluntary. Eventually, she decides that these 12 in- depth interviews will be sufficient to yield high quality data.  Having set up the interviews, the researcher first turns to the quantitative analysis of the e-mails, which she intends to place into a number of categories. However, as the research progresses, she discovers a significant number of personal e-mails, including jokes, a betting syndicate, plans for illicit liaisons and inflamma- tory comments about senior managers and the executive board!  The researcher now faces a difficult ethical dilemma. She decides to include general descriptions of the personal e-mails in her report but not to reveal the names of individuals (although it will not be difficult for the company to trace them given that it now has an e-mail audit trail). She also decides that she will ask  *(Continued)* |

|  |
| --- |
| some questions about personal e-mails in her interviews to gain an employee perspective. Before doing this, she takes another look at her letter to the interviewees and the description of her research. She decides that the description, ‘To investi- gate the purpose of e-mail traffic’ is still valid and an additional letter flagging the new ‘personal e-mail’ probe is not necessary. Participants will still be given the assurance that they can refuse to answer any question and that their responses will be anonymous. |

|  |  |
| --- | --- |
| **Activity 3.14** |  |
| Examine Case Study 3.1 and consider the following questions:   1. Is the research conducted by a researcher or a consultant? Does it make any difference to the ethical issues involved? 2. Have sufficient steps been taken to safeguard ethical principles? Are there any additional steps that you would take? 3. Should the research be abandoned before the qualitative stage?   *Suggested answers are provided at the end of the chapter.* | |

|  |
| --- |
| **SUMMARY**   * A good research topic must have the potential for demonstrating theoretical credi- bility, allow access to the relevant data, provide a symmetry of potential outcomes, and be congruent with your own interests, capabilities and career aspirations. * To generate ideas for a research topic you could look at examples of projects com- pleted by others, or ideas could emerge from your reading of the literature or by a brainstorming process. * Before starting the project, produce a plan to show when and how you intend to conduct your research including data collection, analysis and the writing up process. * An important step in any research project is the literature review. This may assist in the formulation of research questions or topics (deductive approach) or illustrate and illuminate research findings (inductive approach). * Before starting many projects you may be required to write a project proposal. Make sure that, if there is a request for proposals, your bid matches the specifications accurately. Get your proposal evaluated by others before submission. * Ensure that ethical principles are catered for in the research, including the privacy of respondents and their anonymity (if this has been guaranteed).   *(Continued)* |

|  |
| --- |
| **Summary of web links**  [http://www.adeptscience.co.uk](http://www.adeptscience.co.uk/) <http://www.apa.org/ethics/code.html> <http://arl.cni.org/scomm/edir/index.html> <http://www.bera.ac.uk/guidelines.html> <http://www.bhinet.co.uk/> <http://www.bl.uk/services/bibliographic.html> <http://bubl.ac.uk/journals/> <http://link.bubl.ac.uk/libraryopacs/> <http://www.catchword.com/> <http://www.corec.org.uk/> <http://www.endnote.com/support/en4tutorial.asp> <http://www.europa.eu.int/comm/eurostat/> <http://www.imc.co.uk/index3.html> [http://www.ingenta.com](http://www.ingenta.com/) <http://www.ion.ucl.ac.uk/library/rm.htm> <http://www.isinet.com/> <http://lcweb.loc.gov/coll/nucmc/nucmc.html>  <http://www.library.drexel.edu/netresources/subject/greylit.html> <http://www.lib.ucdavis.edu/healthsci/win-bibmanagers.html> <http://www.magic.ac.uk/>  <http://www.psr.keele.ac.uk/data.htm> <http://www.sciencedirect.com/> <http://ssda.anu.edu.au/> <http://www.statistics.gov.uk/> <http://www-uk.ebsco.com/home/> |

**Further reading**

Jankowicz, A.D. (1991) *Business Research Projects for Students*. London: Chapman & Hall. Very readable and contains a practical guide to selecting and planning research projects.

Hart, C. (2001) *Doing a Literature Search*. London: Sage. An essential guide that includes plenty of practical advice and also a host of useful online resources.

Hart, C. (1998) *Doing a Literature Review*. London: Sage. Another essential source that justifies the importance of the literature review and demonstrates the review process.

|  |  |
| --- | --- |
| **Suggested answers for Activity 3.14** |  |
| 1. Since the researcher is hired from outside the organization, it is probably fair to call her a consultant. Does this make a difference to the ethical stance adopted? Well, possibly, yes. Researchers, for example, may be measured against the code of conduct of their relevant professional asso- ciation. Consultants may also have a professional association, but also have to answer to the research sponsor or manager who will tend to be more concerned with ‘results’. 2. The consultant has adopted a number of ethical safeguards, including ask- ing for participation and providing information about the purposes of the research. 3. If this project was being conducted in a purely research context it would probably have to be abandoned. But for the consultant, while needing to give due weight to stakeholders’ interests, the interests of the client come first. | |

**Research Methodology**

**PART B**

**Experimental and Quasi-experimental Research Design**

**4**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Describe the experimental and quasi-experimental research approaches.**
* **Formulate appropriate questions and hypotheses.**
* **Identify populations and samples.**
* **Describe the principles of research tool design.**

We saw in Chapter 2 that experimental research methodology usually involves truth-seeking (as opposed to perspective- or opinion-seeking) and may often involve the use of quantitative methods for analysis. It tends, therefore, to utilize a deductive approach to research design, that is, the use of a priori questions or hypotheses that the research will test. These often flow from sets of issues and questions arising from the researcher’s engagement with a relevant body of liter- ature.The intention of experimental research is the production of results that are objective, valid and replicable (by the original researcher, or by others). In terms of epistemology, then, experimental research falls firmly into the objectivist camp, and is influenced by positivistic theoretical pespectives. It takes, for example, some of the principles of research design (such as the use of experimental and control groups) from the natural sciences. However, given the discredited status of posi- tivism, advocates of the experimental approach are now likely to make more cau- tious and modest claims for the veracity and status of their research results.

In an organizational context, research might stem not from issues prompted

by a body of literature, but from a real, live problem the researcher is asked to solve.The initial focus, then, is the problem itself, but the researcher will probably soon have to access both the academic literature (including technical and institu- tional sources) and also grey literature such as internal organizational documents and reports. Chapter 3 showed how the researcher journeys through a process of refinement, whereby the territory covered by the research literature becomes

**Planning stage**

**FIGURE 4.1** STAGES IN THE PLANNING AND OPERATION OF AN EXPERIMENTAL AND QUASI-EXPERIMENTAL RESEARCH PROJECT (ADAPTED FROM KEPPEL ET AL., 1992)

Use inferential statistics to evaluate statistical hypotheses Accept or reject hypotheses

Review relevant literature and theories

Identify the issue or questions of interest

Develop questions and hypotheses

Identify independent and dependent variables

Prepare formal report for publication or presentation

Use descriptive statistics to describe data

Conduct the study

**Operational stage**

increasingly focused. But this is not just a question of narrowing the research.The core issues that emerge from the literature gradually build into significant sets of themes, or concerns that link to, and help to specify, the research questions and the research design for solving them.

Note that many of the issues discussed in this chapter (for example, the gen- eration of research questions, the identification of samples from populations and issues of validity and reliability) are also discussed in many of the chapters that follow – even those associated with more qualitative designs.

**THE STRUCTURE OF EXPERIMENTAL RESEARCH**

The experimental research design process, put simply, comprises two steps: the planning stage and the operational stage (see Figure 4.1). At the planning stage, the main issue or research question may be posed and the relevant literature and theories investigated. From these it should be possible (if the issue is capable of being researched), to formulate research hypotheses.The dependent variables (the subject of the research) and independent variables (variables that effect the depen- dent variable) are identified and made explicit after which we move into the operational stage.After the experiment has been conducted, the analysis stage may involve the use of both descriptive and inferential statistics (described in Chapter 12).

From the analysis it then becomes possible to either accept or reject the hypothesis. A formal document or presentation is then prepared to report the results. Let us look at each of these stages in more detail.

***Identifying the issue or questions of interest***

We saw in Chapter 3 that some of the criteria that make up a ‘good’ research topic include the availability of resources and access to sponsors and other people who may be able to help in the research. Sometimes a research issue may arise from your reading of a body of literature. In a workplace setting, issues or questions spring up as a result of real problems that require a solution, or as a result of a pilot study prior to the implementation of a research project.

***Reviewing relevant literature and theories***

As we saw in Chapter 2, the experimental approach to research is often deduc- tive, so once an area or issue has been chosen for research, the next stage is to identify and delve into a relevant body of literature. Chapter 3 illustrated some of the sources where you might find the literature you need. Early on in your research, you should try to identify the theories that are relevant to addressing your topic, and also what kind of research methods have been used to address the subject. The literature search will also identify who are the dominant and influ- ential writers in the field. Having looked at the literature, you may decide that the scale of the subject is too large, or that the investigation you were considering has already been done. However, you may also see that previous investigations have been flawed, or that there are gaps in the research that are worth filling.

***Developing questions and hypotheses***

Research questions and hypotheses are merely the configuration of issues into a transparent and measurable formulation.The way in which research questions are stated, their focus and the kinds of data they seek, are strongly connected to the philosophy and research paradigm of the researcher (recall Chapter 2). As Wield (2002) also cautions, writing questions and hypotheses is not necessarily a linear process. Even after they have been formulated, either further reading of the liter- ature, or surprises at the piloting or data gathering stages, can force the researcher to amend or even rewrite them. Let us look at research questions and hypotheses in more detail.

**Research questions**

As Alford (1998) points out, research questions are not the same as problems. Problems, themes and concerns may be allocated to you by a sponsor, or may

emerge from your engagement with a relevant body of literature.Alford, however, asserts that, in contrast to a problem, a research question comprises two elements: first, a connection to a theoretical framework; secondly, a sentence in which every word counts and which ends (not surprisingly) with a question mark. Questions also describe potential relationships between and among variables that are to be tested.

Kerlinger (1986) argues that a good research question:

* Expresses a relationship between variables (for example, company image and sales levels).
* Is stated in unambiguous terms in a question format

But, as Black (1993) states, a question could meet both of Kerlinger’s criteria and still be invalid, because it may be virtually impossible to operationally define some of its variables.What, for example, do we mean by ‘image’ (in the above example), and how would we define it in ways that could be measured? As Hedrick et al. (1993) argue, researchers may have to receive sets of questions from research spon- sors, and these may be posed by non-technical people in non-technical language. The researcher’s first step, then, is to re-phrase the questions into a form that is both researchable and acceptable to the client. Research questions can be classi- fied into four major categories:

* Descriptive (‘What is happening’, ‘Which methods are being used?’).
* Normative (‘What is happening compared to what should happen?)1.The stan- dards against which the outcomes are evaluated could include legal require- ments, professional standards or programme objectives.
* Correlative (‘What is the relationship, and the strength of this relationship, between variable X and Y?’). Note that this establishes a relationship, but it does not imply a cause.
* Impact (‘What impact does a change in X have on Y?’). In contrast to corre- lation studies, impact questions do try to establish a causal relationship between variables.

Table 4.1 provides some examples of research questions for each of these categories.

It is often useful to take a research question and to break it down into sub- ordinate questions. These are highly specific and assist in answering the question to which they are attached.Taking the first question in Table 4.1, we might devise a set of subordinate questions such as:

* How common is drug use amongst male and female students?
* How does drug use compare across different universities?
* How has drug use increased or decreased over the past five years?

This is also a useful exercise because subordinate questions can provide a stage between the original objective and the kinds of detailed questions needed for research tools such as questionnaires and interview or observation schedules. Case

Study 4.1 provides an illustration of how research questions often have to be revised and refined before they become sufficiently focused and usable.

**TABLE 4.1** TYPES OF APPLIED RESEARCH QUESTIONS WITH EXAMPLES

**Type of research question Example**

Descriptive How common is drug use among university students?

What is the frequency of e-learning to classroom learning in large companies?

What proportion of medium-sized organizations have human resource directors?

Normative How serious is drug abuse among university students?

How well run is the local transport system?

To what extent are engineering companies complying with health and safety legislation?

Correlation What is the relationship between gender, academic performance and university drug use?

Is there an association between personality type and seniority in companies?

What is the relationship between obesity and heart disease?

Impact Has a drug awareness programme had any effect on the level of drug use among university students?

Do increased computer literacy skills have any impact on the probability of future employment?

Have new forms of supervision reduced errors in production?

*Source*: Adapted from Hedrick et al., 1993

|  |
| --- |
| **Case Study 4.1 Getting those research questions right**  A researcher, working for a voluntary association giving advice to the public, is concerned that most of those seeking the bureau’s help are white, with very few clients coming from the ethnic minority population. She receives a small grant from the bureau’s trustees to carry out a research project. She formulates her research questions as follows:  **Research questions**   1. To produce a report detailing the research.To check if the bureau is conform- ing to its organizational aims and objectives and if not how it can improve the delivery of services. 2. To increase awareness of the needs of ethnic minority clients and potential clients of the bureau among staff and to inform the organization of staff training needs. 3. To use this as a starting point for further work to be carried out by volunteers at the bureau.   *(Continued)* |

|  |
| --- |
| Take a look at these research questions.What is wrong with them? Well, to be honest, quite a lot. Question 1 is not really a question but an output.This is what will be produced *through* the research.What are listed as research questions do not deserve the description. They may result from the research but are not objectives, since there is nothing here that can be *measured*.  After some thought, the researcher arrives at the following list of questions, namely, that the research will set out to:   1. Identify the needs of ethnic minority groups in the district by:    * Establishing whether they have access to information about the bureau.    * Evaluating whether those that access the information, understand its contents.    * Evaluating whether they trust the information provided by the bureau. 2. Evaluate the degree of awareness of bureau staff (against organizational service levels) about the needs of ethnic minority groups. |

|  |  |
| --- | --- |
| **Activity 4.1** |  |
| Examine the final set of questions in Case Study 4.1. Which of these research questions belongs to the descriptive, normative, correlative or impact categories?  *Suggested answers are provided at the end of the chapter.* | |

Research questions are formulated as part of many research studies, whether perspective-seeking or truth-seeking, although not necessarily at the same stage of the research. In perspective-seeking studies, for example, questions may emerge as part of the data gathering exercise. For truth-seeking research, including exper- imental and quasi-experimental research, they are usually formulated at the beginning of the research process. But while perspective-seeking research usually relies just on research questions, truth-seeking approaches usually go further and require the formulation of a hypothesis.

**Hypotheses**

Research questions are usually broad in nature, and may lend themselves to a number of answers, but a hypothesis is capable of being tested and is predictive. For example, the statement ‘Why is street crime more common in inner-city areas’ is a research question and not a hypothesis. To convert the question into a hypothesis we might conjecture that: ‘High street crime in inner-city areas is a product of liberal policing policies’. Kerlinger suggests that a hypothesis is a

‘conjectural statement of the relation between two or more variables’ (1986: 17). Good hypotheses, then, should contain a statement containing two or more variables that are capable of measurement. Measurement, however, can only occur if the variables contained in the hypothesis can be operationally defined (see next section). Certainly, in the above hypothesis, the two variables ‘street crime’ and ‘liberal policing policies’, can each be operationally defined, compared through a research study, and the statement either accepted or rejected.

In formulating a hypothesis, care should be taken to avoid what Kerlinger (1986) describes as value questions such as those that contain words such as ‘should’, ‘ought’ or ‘better than’. Similarly, the statement ‘The implementation of the new information technology system has led to poor results’ is also a value statement because of the use of the word ‘poor’ – what, exactly, is meant by this? A better approach would be to state the results in measurable terms such as ‘reduced output’,‘lower staff satisfaction’, or ‘computer error’. It is useful to reflect that negative findings are sometimes just as important as positive ones since they can highlight new lines of investigation.

|  |  |
| --- | --- |
| **Activity 4.2** |  |
| Examine each of the following statements and decide which (if any) make valid hypotheses.   1. Mixed ability teaching leads to disappointing levels of student attainment. 2. What are the major causes of car theft in inner-city areas? 3. The ‘Total Quality Care’ system will increase levels of patient satisfaction.   *Suggested answers are provided at the end of the chapter.* | |

**Operationally defining variables**

One of the problems in formulating research questions and hypotheses is that they tend to be somewhat generalized and vague. Before research tools can be drawn up, it is important to operationally define key variables so it is quite clear *what* is being measured. Kerlinger defines an operational definition as something that:

… *assigns meaning to a construct or a variable by specifying the activities or ‘operations’ necessary to measure it.* (1986: 28)

Classifying operational definitions can sometimes be quite challenging. For exam- ple, our research question might be: What factors provide the key drivers for ensuring business success in the medium term? As it stands, the question is far too vague to provide a basis for measurement. Returning to the question, we need to operationally define what we mean by ‘business success’: is it output, profitability, cost control or perhaps a combination of all of these? Similarly, what is meant by ‘medium term’? Is it one year, two years, ten years? Going through the process of producing operational definitions allows us the opportunity to rethink some of

our assumptions and may even encourage us to rewrite our original research question or questions. Note the loops back to previous stages in Figure 4.1.

***Identifying independent and dependent variables***

Scientific research aims to identify why conditions or events occur. These causes are called *independent variables* and the resulting effects, *dependent variables.* A vari- able is a property that can take different values.Thus, the focus of research might be the introduction of a new performance-related pay system (independent vari- able) which is designed to lead to greater output (dependent variable). But as Black (1993) warns, relationships between variables may be ones of association, but this does not necessarily imply causality, that is, that changes in one variable lead to changes in another. For example, after the introduction of performance- related pay, output may rise, but this increase may have been caused by completely different factors (for example, better weather or victory by the local football team, each of which might boost morale and hence output).

Indeed, independent variables may act upon dependent variables only indi-

rectly via *intervening* variables.Thus, someone may undertake high calibre profes- sional training hoping that this will eventually lead to a higher income level. But in practice, the professional training (independent variable) acts upon income level (dependent variable) via its effects on the person’s job prospects (intervening variable, as illustrated in Figure 4.2).The Figure also shows other relationships. For example, it is conceivable that, having achieved a higher level of income, some people may then want to (and be able to afford) more professional training.

**Professional**

**training**

**Job prospects**

**Income level**

Independent variable

Intervening variable

Dependent variable

**FIGURE 4.2** ILLUSTRATION OF THE RELATIONSHIP BETWEEN DEPENDENT, INDEPENDENT AND INTERVENING VARIABLES

In experiments, it is the independent variable that is manipulated to see the effect. So, using the above example of performance-related pay, we might intro- duce such a scheme into a company and observe the effect on output. But, as has already been suggested, there may be other factors at work that might influence such changes in output. These are termed *extraneous variables* and must be ‘con- trolled for’, that is, the study designed in such a way that the impact of extrane- ous variables does not enter the calculations.

There are various ways of controlling for extraneous variables. One is through *elimination*. So, using our example of performance-related pay, if the study was concerned about the possible influence of current status or grade, we would

only choose people from a certain grade for the study. Another way of controlling extraneous variables is through *randomization*. If randomization is achieved, then it is probable that the experimental groups are equal in terms of all variables. It should be noted, of course, that complete randomization is difficult to achieve in practice. Say, for example, that we know that male and female workers are exactly equally represented in the workforce. If we were to take a random sample of 100 workers, we might expect to finish with 50 men and 50 women. In practice, we often end up with slight variations such as 48 men and 52 women. If gender constitutes the inde- pendent variable of interest to the study, we might want to ensure that the groups are equally represented, and randomly select male workers until the numbers reached 50 and likewise for female workers (see Stratified random sampling, p. 87).

***Conducting the study***

Here begins the operational stage of the research, the success of which depends, not only on how the data are gathered, but on how well the study has been planned. While the research strategy (experimental) has been selected, there are still a variety of research designs at the researcher’s disposal (see Design structure, next) and these have to be selected with care.

***Using descriptive and inferential statistics***

The data are analysed using a variety of statistical methods, all of which should have been selected at the planning stage. Descriptive statistics are used to describe or summarize a set of data, while inferential statistics are used to make inferences from the sample chosen to a larger population (see Chapter 12).

***Accepting or rejecting hypotheses***

As we saw in Chapter 2, it is impossible to ‘prove’ that any theory is right. All theories are provisional and tentative (until disproved). However, the weight of evidence must be sufficient that a hypothesis can be accepted as proved.As we will see in Chapter 12, experimental design makes use of inferential statistics and prob- ability to calculate the risk involved in accepting the hypothesis as true (when it is in fact false) and rejecting the hypothesis as false (when it is in fact true).

***Preparing the formal report***

Particularly when a study has been sponsored or commissioned, the researcher will need to prepare and deliver some kind of formal presentation of the findings. At this stage the focus will be on:

* Why the study was conducted.
* What research questions and hypotheses were evaluated.
  + How these were turned into a research design (with sufficient detail that the experiment could be replicated).
  + What differences were observed between the hypotheses and the results.
  + What conclusions can be drawn and whether they support or contradict the hypothesis and existing theories.

In a more organizational and less academic setting, the formal report will tend to focus on the rationale for the study, the kinds of questions being posed, the results, and what findings, if any, can be implemented.Writing the research report is cov- ered in detail in Chapter 14. For projects that have received research funding, sponsors usually want to go beyond the report and to be provided with informa- tion on how the results of the project will be disseminated.

**DESIGN STRUCTURE**

The basis of true experimental design is that the researcher has control over the experiment, that is, who, what, when, where and how the experiment is to be conducted. This particularly includes control over the ‘who’ of the experiment – that is, subjects are assigned to conditions randomly.Where any of these elements of control is either weak or lacking, the study is said to be a quasi-experiment. Often, in organizational settings, for example, for practical purposes it is only pos- sible to use pre-existing groups. Hence, it is only possible to select subjects from these groups rather than randomly assign them (as in a true experimental study). Another important difference is that while in experiments we can *manipulate* vari- ables, in quasi-experimental studies we can only *observe* categories of subjects. So, taking the latter case, we could consider the differences between two groups to be the independent variable but we would not be manipulating this variable.

One of the strengths of experimental design is that randomization improves

the control over threats to internal validity. In other words, if the experimental intervention (treatment) does lead to a change in the dependent variable, there is some justification for believing that this has been caused by the treatment itself, and not just by the effect of some extraneous variable. Yet it should not be assumed that random assignment is the goal of all experimental studies. As Hedrick et al. (1993) point out, using an experimental group also means using a control group who do not receive the intervention. Even if the treatment does not prove to be effective, it usually comes with more resources.The control group will be denied these, and for a long period if it is a longitudinal study.

One of the strengths of quasi-experimental designs is that it is about as near as one can get to an experimental design, so it can support causal inferences. In the words of Hedrick et al. (1993), it provides ‘a mechanism for chipping away at the uncertainty surrounding the existence of a specific causal relationship’ (1993: 62). Quasi-experimental designs are best used when:

* + Randomization is too expensive, unfeasible to attempt or impossible to monitor closely.

**TABLE 4.2** DIFFERENCES BETWEEN EXPERIMENTAL, QUASI-EXPERIMENTAL AND NON-EXPERIMENTAL RESEARCH

|  |  |  |
| --- | --- | --- |
| **Research type** | **Selection of research sample** | **Manipulation of variables** |
| Experimental | Random | Yes |
| Quasi-experimental | Intact | Yes |
| Non-experimental | Intact | No |

* There are difficulties, including ethical considerations, in withholding the treatment.
* The study is retrospective and the programme being studied is already under way.

According to McBurney (1998), generally, experimental designs are usually consid- ered superior to quasi-experimental (and quasi-experimental to non-experimental). However, it may not always be possible to replicate social, organizational or behavioural conditions in a laboratory setting. Therefore, observation in a field setting, say, might be preferable to an experiment because the advantage of real- ism outweighs the loss of control. The broad differences between experimental, quasi-experimental and non-experimental studies are summarized in Table 4.2, and an example of a quasi-experimental design provided in Case Study 4.2.

|  |
| --- |
| **Case Study 4.2 A quasi-experimental design**  Research has suggested that teenage pregnancy has significant effects on girls in terms of their later income level, educational attainment and general welfare – putting them on a lower part of the economic ladder. But it is also acknowledged that teenage pregnancy is more common among lower income families, a poten- tially confounding factor.  It is not possible to randomly assign teenage girls to become or not to become pregnant! In the research quoted by Hedrick et al. (1993) this problem was over- come by using as a non-equivalent group the sisters of girls who became pregnant in their teens, but who themselves did not become pregnant until at least the age of 20. This allowed the researchers to control for the family economic disadvan- tage variable.When the data were analysed, it was found that the previously nega- tive effects associated with teenage pregnancy were not as pronounced as expected. |

|  |  |
| --- | --- |
| **Activity 4.3** |  |
| Taking Case Study 4.2, explain:   1. Why this is a quasi-experimental rather than an experimental study. 2. Why the greater incidence of teenage pregnancy among lower income groups is a confounding factor for this particular study.   *Suggested answers are provided at the end of the chapter.* | |

**TABLE 4.3** NON-EXPERIMENTAL DESIGN WITH INTACT GROUP

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Allocation of subjects** | **Treatment** | **Test** |
| Single | No – intact | No | No |

Let us take a look at a number of research designs, starting with frequently used (but faulty designs) and then some sound designs.

***Faulty designs***

**Design 1: Non-experimental with intact group**

In this design, an intact group is taken, and attempts made to discover why changes in an independent variable occurred. There is no attempt made here to manipulate any independent variables – hence the design is non-experimental (see Table 4.3). Say that a voluntary organization analyses its charitable donation patterns over the past three years by geographic region.The dependent variable is the level of charitable donations for each region.The independent variable is not manipulated but is imagined. In other words, researchers would conduct a study that would try to find explanations for any regional differences, perhaps using documentary evidence. Clearly, the problem here is providing convincing evi- dence of causation – that a particular independent variable caused the changes in the dependent variable.

In their influential work, Campbell and Stanley (1963) describe designs that

are devoid of a control group as being of almost no scientific value.This is not to say that they are completely worthless. Each design might reveal some interesting evidence of value to an organization, but they are worthless in the sense that it would be a mistake to draw firm conclusions from them.

**Design 2: Post-test only with non-equivalent control groups**

In this type of design, a treatment is given to one group (the experimental group), but not to another (the control). Both groups are then given a post-test to see if the treatment has been effective (see Table 4.4). Unfortunately, subjects have not been randomly allocated between the experimental and control groups, so that it is impossible to say that the two groups are equivalent. If, say, the exper- imental group performs better in the test, it is not possible to rule out the pos- sibility that this was because the subjects in this group were more able or better motivated.

**Design 3: One group, pre-test/post-test**

In Design 3, a group is measured on the dependent variable by a pre-test, an independent variable is introduced, and the dependent variable measured by a post-test. So, an organization could measure staff attitudes towards racial tolerance,

**TABLE 4.4** POST-TEST ONLY WITH NON-EQUIVALENT CONTROL GROUPS

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Allocation of subjects** | **Treatment** | **Test** |
| 1 | No | Yes | Yes |
| 2 | No | No | Yes |

**TABLE 4.5** ONE GROUP PRE-TEST/POST-TEST DESIGN

**Group Allocation of subjects Treatment Test**

Single No – intact Yes Yes

introduce a race-awareness programme, and measure staff attitudes once the programme was completed.Any change in attitudes would be measured by changes in scores between the two tests.

This design is an improvement on Design 1 as it appears that any changes in attitude could be attributed to the impact of the treatment – the attitude train- ing. Unfortunately, as Campbell and Stanley (1963) point out, there are other factors that could have affected the post-test score. These can impact on the experiment’s internal validity, that is, the extent to which we can be sure that experimental treatments did make a difference to the independent variable(s). Such factors include:

* *Maturation* effects: people learn over time, which might affect scores on both mental ability and attitude, or they may grow more fatigued over time, which may also affect their post-test scores.
* *Measurement procedures*: the pre-test itself might have made the subjects more sensitive to race issues and influenced their responses on the post-test. Both controversial and memory issues are prone to be influenced in this way.
* *Instrumentation,* in which changes, say, in the observers or scorers used to assess the test results may affect the scores obtained.
* *Experimental mortality,* or the differential loss of respondents from one group compared to the other, for example, through absence, sickness or resignations.
* *Extraneous variables* might influence the results, particularly if there is a large time gap between the pre-test and post-test.

***Sound designs***

McBurney (1998) states that there is no such thing as a perfect experiment. Nevertheless, there are two elements of design that provide some control over threats to validity and which form the basis of all sound experimental designs:

(a) the existence of a control group or a control condition; (b) the random allo- cation of subjects to groups.

**TABLE 4.6** EXPERIMENTAL GROUP WITH CONTROL

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Group** | **Allocation of subjects** | **Treatment** | **Pre-test** | **Post-test** |
| 1 | Random | Yes | Yes | Yes |
| 2 | Random | No | Yes | Yes |

**TABLE 4.7** QUASI-EXPERIMENTAL DESIGN WITH NON-EQUIVALENT CONTROL

**Group Allocation of subjects Treatment Pre-test Post-test**

1. No – intact Yes Yes Yes
2. No – intact No Yes Yes

**Design 4: Experimental group with control**

In this design, subjects are randomly assigned to each of the experimental and control groups, which means that, at least theoretically, all independent variables are controlled. Hence, again using our racial tolerance example, the study would ran- domly assign groups of people to both the experimental and control groups. The experimental group would receive the treatment (the race-awareness training) while the control group would not receive the training. Notice that any extrane- ous variables, such as the effects of the pre-test on attitudes, would be controlled for since the impact should be the same on both the experimental and control groups. If the training has been genuinely successful, then the improvements in test scores for the experimental group should exceed those for the control.

**Design 5: Quasi-experimental design with non-equivalent control**

Recall that one of the features of quasi-experimental designs is that it is not pos- sible for the researcher to control the assignment of subjects to conditions, and will often have to take groups that are intact. For example, studies in education will often have to use classes that already exist.A typical feature of quasi-experiments is where we have an experimental and a control group, but subjects have not been randomly allocated to either of the two groups.

The use of a control group makes this design superior to Designs 1, 2 and 3, since at least the impact of extraneous variables is controlled for, but not as reli- able as Design 4. If steps can be taken to improve the equivalence between the two groups then this will improve the validity of the study. Matching, for exam- ple, will help in this direction. Here, steps are taken to match subjects between groups against significant variables such as age, sex, income, etc. If matching is not possible, then at least both groups should be chosen from the same population.

One of the challenges of using a non-equivalent control group design is in the analysis of the results. McBurney (1998) distinguishes between desired result patterns and those that it is impossible to interpet. In pattern A (Figure 4.3), for example, both the experimental and control groups exhibit the same performance in a pre-test, but only the experimental group improves its performance in the

**Interpretable pattern of results**

Experimental

Response

Response



**A**

Experimental

Control



**B**

Control

Pre-test Post-test

**Uninterpretable pattern of results**

Pre-test Post-test

4 **D** Experimental



**C**

Control

Experimental



3

Response

Response

2 Control

1

Pre-test Post-test Pre-test Post-test

**FIGURE 4.3** INTERPRETABLE AND UNINTERPRETABLE PATTERNS OF RESULTS IN A NON-EQUIVALENT CONTROL GROUP DESIGN WITH PRE-TEST AND POST-TEST (ADAPTED FROM MCBURNEY, 1998)

post-test. Although the experimental and control groups are not equivalent, their performances can be compared because their behaviour was the same at the beginning. A similar situation pertains for pattern B – the experimental group performed worse than the control group in the pre-test but improved in the post- test, with the control showing no improvement. It would be difficult to find a rea- son as to why this process had occurred by chance alone.

Pattern C, however, is much harder to interpret. Although it is true that the performance of the experimental group has improved, the lack of improvement by the control group may be due to the ceiling effect – they began by being better than the experimental group and it may not be possible to improve on this level of performance. Hence, it cannot be deduced that the improvement in the experimental group was due to the treatment. In pattern D the performance of both the experimental and control groups has improved, with the experimental group improving to a higher level. At first sight this might appear to be a signifi- cant result but a claim for this would be mistaken since both groups have improved their performanance by the same proportion.

**Design 6: Developmental designs**

Like interrupted time-series designs, developmental designs involve measure- ment across time and, again, do not involve the use of control groups. One kind of developmental design is the use of a *cross-sectional study*, which looks at a phenomenon at a particular period of time. For example, a cross-sectional design might study the determinants of accidents in an organization. A survey might be used to calculate an average number of days lost in accidents per employee. The next stage of the survey might examine accident rates by age group, gender, occupational role and seniority. One of the advantages of cross- sectional design is that it can reveal associations among variables (age, gender, etc.). But what it cannot do is reveal causation. To achieve this, we would have to turn to a *longitudinal study*, taking a series of samples over time. The prob- lem here, however, is that it may be difficult to gain access to the same set of people over a long period. Indeed, even different sets of researchers may have to be employed.

**Design 7: Factorial designs**

The designs we have considered so far have involved manipulation or change in one independent variable. Sometimes, however, it becomes necessary to investigate the impact of changes in two or more variables. One reason for this could be that there is more than one alternative hypothesis to confirm or reject. Another reason might be to explore relationships and interactions between variables. Here we use a facto- rial design which allows us to look at all possible combinations of selected values.

The simplest form is where we have two variables, each of which has two values or levels. Hence, it is known as a two-by-two (2  2) factorial design. In Figure 4.4, for example, the two variables are light and heat, each of which has two levels (cold/hot and dull/bright). Hence, we have four possible combinations, as illustrated.We could conduct an experiment to see which combination of fac- tors gives rise to the most attentiveness (measured, say, by production levels, or on a self-assessment questionnaire) in a workplace. We might find, for example, that dull light combined with both heat and cold leads to low levels of attentiveness, as do bright/hot conditions; but the interaction of brightness with cold temper- atures keeps all workers ‘on their toes’!

**GENERALIZING FROM SAMPLES TO POPULATIONS**

A typical human trait is to make generalizations from limited experience or infor- mation. For example, we may ask a member of staff what they think of the new company intranet system. We may infer that this could be the opinion through- out the organization, the entire workforce constituting what in research terms is known as the *population*. A population can be defined as the total number of possible units or elements that are included in the study. If it is not possible to eval- uate the entire population (because of its large size or a lack of research resources),

**Light**

Dull Bright

|  |  |
| --- | --- |
| Dull/cold | Bright/cold |
| Hot/dull | Hot/bright |

Cold

**Heat**

Hot

**FIGURE 4.4** A 2  2 FACTORIAL DESIGN SHOWING ALL POSSIBLE COMBINATIONS OF FACTORS

then we might select a *sample* of employees for evaluation. According to Fink, ‘A good sample is a miniature of the population – just like it, only smaller’ (1995a: 1).

***The process of selecting samples***

A sample will be chosen by a researcher on the basis that it is *representative* of the population as a whole, that is, the sample’s main characteristics are similar or iden- tical to those of the population. Samples are selected from a sampling frame, that is, a list of the population elements (see Figure 4.5). Notice that, while every attempt will be made to select a sampling frame that provides details of the entire population, practical circumstances may make the sampling frame incomplete. For example, the population may comprise all people working in a company, but the personnel records may have missed out some staff by mistake, whilst new starters have not even been entered onto the database yet.The research sample itself might be less than the sampling frame just because using all sampling frame records is too expensive. But having established the sampling frame and how many people we are going to use, how do we choose them?

Population

Sampling frame

Sometimes, the sampling frame can be larger than the population

Sample

**FIGURE 4.5** RELATIONSHIP BETWEEN THE POPULATION, SAMPLING FRAME AND SAMPLE

Most methods utilized to achieve representative samples depend, in some way, on the process of random assignment. Random sampling is the selecting of a random sample such that each member of the population has an equal chance of being selected. Clearly, this can present practical problems. Can we, for example, acquire a full list of company employees from which to draw the sample (the sam- pling frame)? But as Black (1993) warns, even after taking a random sample, there remains a finite possibility that it may not be representative of the population after all.The chances of this happening are reduced if the study can be replicated, that is, other random samples are used and studied. Nevertheless, the chances of a sam- ple being representative are higher through *random* selection than if the sample is purposive (specifically selected by the researcher).

Of course, we may not always want to attain completely random samples.

Again using the simple example of gender, a factory workforce of 100 people might comprise 90 women and 10 men. A random sample of 25 people might give us 23 women and 2 men. Clearly, if gender is the independent variable, a sample of 2 men would probably be of little value to the study. In this case, we might use stratified random sampling by deciding to random sample female work- ers until 15 are picked and follow the same strategy but oversample for men until we have a sample of 10. Let us look at some of the approaches to achieving representativeness in samples.

***What size sample?***

The first stage is to determine the actual size of the sample needed. Before doing this, we need to decide on the size of the confidence interval.This is the range of figures between which the population parameter is expected to lie. Say we set the *confidence interval* at 4 per cent, and 45 per cent of the population pick a particu- lar answer. This means that we are saying that we are confident that between 41 per cent (454) and 49 per cent (454) of the entire population would have picked that answer.We also decide on a *confidence level*, usually of either 95 per cent or 99 per cent.This states the probability of including the population mean within the confidence interval. This is chosen before working out the confidence inter- val. In many studies, a confidence level of 95 per cent is often deemed sufficient. In medical research, a level of 99 per cent is usually taken because of the need to be highly confident of estimates. Experimenting with the next Activity should make this clearer.

|  |  |
| --- | --- |
| **Activity 4.4** |  |
| To calculate the size of sample you need from a given size of population, point your Web browser to:  <http://www.surveysystem.com/sscalc.htm> | |

***Randomization***

Having estimated the size of sample you need, you can now go about randomly selecting it. As we have seen, randomization is the process of assigning subjects to experimental and control groups such that the subjects have an equal chance of being assigned to either group. The process of random selection can be accom- plished either by using the appropriate statistical table (see Table 4.8) or using a special computer program (see Activity 4.5).

Say you have acquired a list of 1000 of the company’s staff from which you want to randomly select 50 as your research sample. First, ascribe a number to each staff member on the list. Then, using a pencil, close your eyes and point to part of the table. If you happen to select, say, 707, the top number of the third column, take the first two numbers, 70, and work down your list of random numbers in the table to the 70th. Hence, your first number is 799. Then, using the last digit from 707 and the first digit of the next three digit figure, 872, you get 78. Select the 78th position down the list which gives you 343. Go back to the number 872 and choose the last two digits of that number, 72, and take the 72nd number from the table, etc. Repeat this process until 50 names have been selected. Now take a look at the Web randomiser (Activity 4.5) – you may find it easier!

**TABLE 4.8** A THREE DIGIT RANDOM NUMBERS TABLE OF NUMBERS BETWEEN 0 AND 999 (FROM BLACK, 1993)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 777 | 841 | 707 | 655 | 297 | 947 | 945 | 734 | 697 | 633 |
| 297 | 522 | 872 | 029 | 710 | 687 | 64 | 660 | 555 | 489 |
| 672 | 573 | 065 | 306 | 207 | 112 | 703 | 768 | 377 | 178 |
| 465 | 436 | 070 | 187 | 267 | 566 | 640 | 669 | 291 | 071 |
| 914 | 487 | 548 | 262 | 860 | 675 | 846 | 300 | 171 | 191 |
| 820 | 042 | 451 | 108 | 905 | 340 | 437 | 347 | 999 | 997 |
| 731 | 819 | 473 | 811 | 795 | 591 | 393 | 769 | 678 | 858 |
| 937 | 434 | 506 | 749 | 268 | 237 | 997 | 343 | 587 | 922 |
| 248 | 627 | 730 | 055 | 348 | 711 | 204 | 425 | 046 | 655 |
| 762 | 805 | 801 | 329 | 005 | 671 | 799 | 372 | 427 | 699 |

|  |  |
| --- | --- |
| **Activity 4.5** |  |
| Your sample comprises 100 people from whom you want to randomly select 10 as your sample. All people are allocated a number from 1 to 100. You now want to produce a set of 10 random numbers ranging from 1 to 100. In your Web browser, go the following address:  <http://www.randomizer.org/>  Click on [Randomiser] then respond as follows to the questions presented:   * How many sets of numbers do you want to generate?  1 * How many numbers per set?  10 * Number range  1 to 100 * Do you wish each number in a set to remain unique?  Yes * Do you wish to sort your outputted numbers (from least to greatest?)  Yes * Click on [Randomise Now!]   You should see a set of 10 random numbers arranged in a row. | |

***Types of random sample***

In an ideal world, you would have sufficient time and resources to choose com- pletely random samples. In the real world, due to practical constraints, you may have to choose other types of sampling techniques. Random samples are prefer- able to non-random.

**Simple random sampling**

This relies on taking a completely random sample of the population (as in Activity 4.5) and is used when it is believed that the population is relatively homogenous with

respect to the research questions of interest. It relies, however, on having access to a complete list of the population (the sampling frame is equal to the population) so this may not always be practicable.

**Stratified random sampling**

This consists of taking a sample from various strata. Let us take the example of a large fashion retailer that wants to examine the reliability of its supply chain. Hence, it would take a random sample of its women’s clothes suppliers, a random sample of its shoe suppliers, a random sample of its clothes accessory suppliers, etc. Stratified random samples are used because the researcher believes that the iden- tified sub-groups are likely to markedly differ in their responses. In effect, the stratified random sample treats the population as separate sub-populations. If there are 50 women’s clothes suppliers, 20 shoe suppliers and 200 accessory suppliers, the samples selected should reflect these proportions.

**Cluster sampling**

This acknowledges the difficulty in sampling a population as a whole, especially when convenient sampling frames are not available. For example, in an educa- tional study, you might not be granted access to a college’s enrolment list. Instead, you could obtain a list of all the classes in the college and randomly select 10 per cent of them.You would use the students from these classes as your sample.

**Stage sampling**

This is an extension of cluster sampling that involves successive random selections. So, using the education example, the researcher randomly selects 10 per cent of the college’s classes and then randomly selects 20 per cent of the students from each of these classes.

***Types of non-random sample***

As we have seen, random samples are preferable to non-random samples. Sometimes, however, for practical or other reasons, we have to make do with non- random samples.

**Purposive sampling**

Here, the researcher deliberately selects the subjects against one or more trait to give what is believed to be a representative sample. This approach may, indeed,

succeed in achieving a true cross-section of the population. For example, market research may seek a sample that includes a balance between males and females in the sample and across all age ranges. The disadvantage of purposive sampling is that the researcher may inadvertedly omit a vital characteristic or may be sub- consciously biased in selecting the sample.

**Quota sampling**

In this approach, the researcher non-randomly selects subjects from identified strata until the planned number of subjects is reached. So, the researcher may chose to stratify the study according to social class, and go on selecting subjects until each of the strata is filled to a chosen level. An advantage of this approach is that each group is of equal size which can be important for certain inferential sta- tistical tests (see Chapter 12).The disadvantage is that the size of certain strata may not accurately reflect their proportion in the overall population. For example, pro- duction workers outnumber managers in most industrial organizations.

**Convenience or volunteer sampling**

Here, the sample is selected purely on the basis that they are conveniently avail- able. So, a staff ‘suggestion box’ will contain the views of those who volunteer their views, but there is no way of telling how representative these are of the workforce in general. Convenience samples such as this may be useful indications of trends but need to be treated with extreme caution.

**Snowball sampling**

With this approach, the researcher identifies a small number of subjects, who, in turn, identify others in the population. Davenport and Prusak (2000) describe how, in a study of knowledge management in an organization, researchers inter- view someone who is a ‘knowledge source’, who then suggests other likely per- sons, etc.

|  |  |
| --- | --- |
| **Activity 4.6** |  |
| A large multinational computer manufacturing company has two factories in the UK, one in Eire, five in Japan and three in the USA. In total it employs 25,000 people world-wide. The Board of Directors wishes to sponsor a survey of staff attitudes towards a proposed branding change in the company’s name, logo and marketing profile. It does not wish to poll the entire workforce since this would resemble a plebiscite that the company might, then, find itself  *(Continued)* | |

morally obliged to implement. To aid decision-making flexibility, it decides to use a sample of 2,500 employees. Examine each of the following scenarios and decide which constitutes (a) stratified random sampling; (b) random sam- pling; (c) stage sampling; (d) purposive sampling; (e) volunteer sampling.

1. Five of the company’s eleven factories are randomly selected. A random selection is then made that selects five departments in each factory and 100 people are interviewed in these departments in each of the factories chosen.
2. Ten per cent of staff are chosen from each individual grade of staff in each factory in the organization.
3. A sample is chosen to ensure an even distribution between males and females in the sample, and a balance in terms of grade, age, seniority and years of service in the organization.
4. A central computer holds details of all employees in the organization across the globe. A computer program is written that randomly selects 2,500 names.
5. A Web-based questionnaire is designed for the company intranet, and an e-mail sent to each employee inviting them to complete it. Once 2,500 responses have been received, the website is shut down.

*Suggested answers are provided at the end of the chapter.*

***Generalizing***

One of the objectives of experimental research is to achieve a situation where the results of a study using a sample can be generalized.According to Kerlinger (1986), generalizing means that the results of a study can be applied to other subjects, groups or conditions. Generalizing means that the fruits of research can have a broader application than merely being limited to a small group. On the other hand, just because a study does not find results that are capable of generalization does not mean they have no relevance. A small case study, for example, may pro- duce findings that are interesting and possibly indicative of trends worthy of repli- cation by further research.And from a perspective-seeking view they may be seen as valid in their own right.The important point is that you should not make firm or exaggerated claims on the basis of small, unrepresentative samples.

**DESIGNING RESEARCH INSTRUMENTS**

We have looked, so far, at some of the general principles of research design, including the uses of experimental and control groups and the selection of repre- sentative samples so that results can be generalized to a larger population. However, for defensible inferences to be made on the basis of the data, any research tools used (such as questionnaires, interview schedules and observation

Operationally defined subject area

Research instrument subject area

Zone of Neglect Zone of Validity Zone of Invalidity

**FIGURE 4.6** RELATIONSHIP BETWEEN RESEARCH INSTRUMENT AND OPERATIONALLY DEFINED SUBJECT AREAS AND THE ISSUE OF VALIDITY

schedules) must be internally valid and reliable. To achieve external validity, such instruments must be designed in such a way that generalizations can be made from the analysis of the sample data to the population as a whole.

This section deals with some of the general principles of validity and reli- ability, but these important issues are taken up in more detail when describing the design of specific data collection tools in later chapters.

***Validity***

To ensure validity, a research instrument must measure what it was intended to measure.This may sound like an obvious statement, but many novice researchers make the mistake of asking spurious questions in a misguided attempt to collect as much data as possible – just in case some of it may be needed at the analysis stage! McBurney (1998) poses the interesting analogy of using a measurement of hat size to determine intelligence. You could measure someone’s hat size, say, every hour and always come up with the same result. The test, then, is reliable. However, it is not valid, because hat size has nothing to do with what is being measured.

In Figure 4.6 we can see that only part of the research instrument covers the subject areas that have been operationally defined. Some operationally defined sub- jects have not been addressed by the instrument (Zone of Neglect), while other parts of the instrument cover issues of no direct relevance to the research study at

all (Zone of Invalidity).To achieve validity, the research instrument subject area and operationally defined subject areas must exactly match (Zone of Validity).

The issue of validity, however, is much more complex than this. At a basic level, it can be defined as seven types: internal, external, criterion, construct, con- tent, predictive and statistical validity.

**Internal validity**

Internal validity refers to correlation questions (cause and effect) and to the extent to which causal conclusions can be drawn. If we take, for example, an evaluation of the impact of a health education campaign, one group receives the educational material (the experimental group) while one does not (the control group). Possible confounding variables are controlled for, by trying to make sure that participants in each group are of similar ages and educational attainment. Internal validity (the impact of the campaign) may be helped by testing only those who are willing to participate in the experiment. But this reduces the completely random nature of the experimental group and hence the external validity of the study (see next).

**External validity**

This is the extent to which it is possible to generalize from the data to a larger population or setting. Clearly, this is important in experimental and quasi- experimental studies where sampling is required and where the potential for generalizing findings is often an issue. As Robson (1993) points out, the argument for generalization can be made by either direct *demonstration* or by *making a case*.The problem of generalizing from a study, is that cynics can argue that its results are of relevance only to its particular setting. Direct demonstration, then, involves carrying out further studies involving different participants and in different settings. If the findings can be replicated (often through a series of demonstrations), then the argu- ment for generalizing becomes stronger. Making a case simply involves the con- struction of a reasoned argument that the findings can be generalized. So, this would set out to show that the group(s) being studied, or the setting or period, share cer- tain essential characteristics with other groups, settings or periods.

**Criterion validity**

This is where we compare how people have answered a new measure of a concept, with existing, widely accepted measures of a concept. If answers on the new and established measures are highly correlated, then it is usually assumed that the new measure possesses criterion validity. However, as de Vaus (2002) suggests, a low cor- relation may simply mean that the old measure was invalid. Furthermore, many con- cepts have no well-established measures against which to check the new measure.

**Construct validity**

Construct validity is concerned with the measurement of abstract concepts and traits, such as ability, anxiety, attitude, knowledge, etc. As we saw above, each of

these traits has to be operationally defined before it can be measured.Taking each trait, the researcher proceeds to elaborate on all of the characteristics that make up that trait. For example, if we use the construct ‘confidence’ within a particular research context this might be defined as:

* The ability to make quick decisions.
* Sticking with personal decisions once these are made.
* Strong interpersonal skills.

You might reflect here that, in fleshing out traits to this level of detail, it is only a relatively short step to the creation of a research instrument like a questionnaire.

**Content validity**

Content validity is associated with validating the content of a test or examination. Since it is important to create a match between what is taught and what is tested, this might include comparing the content and cognitive level of an achievement test with the original specifications in a syllabus. Let us take the case of a com- puter company that provides a training programme in fault finding and rectifica- tion for those retail companies that sell its products. After a two-day training programme, participants are given a 50-question multiple-choice test. The com- puter company will want to ensure that the content of the test is matched with the content of the training programme so that all the syllabus is covered, and only issues that have been taught are assessed. Equally, it will want to assure itself that it has delivered the training programme at a level so that attendees learn the skills of problem solving.The assessment, then, will also have to be at this problem solv- ing level (rather than, say, merely applying rules, or recalling facts) for the test to be valid.

**Predictive validity**

This shows how well a test can forecast a future trait such as job performance or attainment. It is no use if a test has both construct and content validity if it fails to identify, say, those who are likely to be ‘high performers’ in a key work role.

**Statistical validity**

This is the extent to which a study has made use of the appropriate design and statistical methods that will allow it to detect the effects that are present.

***Reliability***

According to Black (1999) reliability is an indication of consistency between two measures of the same thing.These measures could be:

* Two separate instruments.
* Two like halves of an instrument (for example, two halves of a questionnaire).
* The same instrument applied on two occasions.
* The same instrument administered by two different people.

If we were to take another sort of measuring device, a ruler, how sure can we be that it is always a reliable measure? If it is made of metal, does it expand in extreme heat and therefore give different readings on hot and cold days? Alternatively, we might use it on two different days with similar temperatures, but do we mark off the measurement of a line on a piece of paper with the same degree of care and accuracy? For a research tool to be reliable we would expect it to give us the same results when something was measured yesterday and today (providing the underlying trait(s) being measured have not changed). Similarly, any differences found in traits between two different people we would expect to be based on real differences between the individuals and not be due to inconsis- tencies in the measuring instrument. Reliability is never perfect and so is mea- sured as a correlation coefficient. In the social and business sciences it is rarely above 0.90. If a research instrument is unreliable, it cannot be valid. Like valid- ity, there are several ways of measuring reliability. Black (1993) describes five of them.

**Stability**

This measures the scores achieved on the same test on two different occasions. Any difference is called *subject error*. For example, a survey of employee attitudes towards their workplace may yield different results if taken on a Monday than on a Friday. To avoid this, the survey should be taken at a more neutral time of the week.

**Equivalence**

Another way of testing the reliability of an instrument is by comparing the responses of a set of subjects with responses made by the same set of subjects on another instrument (preferably on the same day).This procedure is useful for eval- uating the equivalence of a new test compared to an existing one.

**Internal consistency**

This measures the extent to which a test or questionnaire is homogenous, and allows a reliability coefficient to be calculated. In the words of Sekaran, the items in the measuring instrument should ‘hang together as a set’ (1992: 174).

**Inter-judge reliability**

This compares the consistency of observations when more than one person is judging. An example would be where two people judge the performance of a

member of an organization’s marketing staff in selling a product over the telephone to the public. The reliability of the observation is provided by the degree to which the views (scores) of each judge correlate. *Observer error* can be reduced by using a high degree of structure to the research through the use of a structured observation schedule or questionnaire.

**Intra-judge reliability**

Where a large amount of data have been collected by a researcher over time the consistency of observations or scores can be checked by taking a sample set of observations or scores and repeating them. A further problem, and often a sig- nificant one, is *bias* on the part of respondents. It is quite common, for example, for respondents to provide a response they think the researcher is seeking. Particularly if the researcher is seen to be representing ‘management’, respondents may be reluctant to provide honest answers if these are critical of the organization. Even assurances of confidentiality may not be enough to encourage complete honesty.

|  |  |
| --- | --- |
| **Activity 4.7** |  |
| A district police force plans to conduct a survey to discover the attitudes of recent victims of crime to the way police officers have handled their cases. The aims of the survey are to: (a) measure public perceptions of the speed of police responses to reports of the crime; (b) reveal whether victims believe police are collecting appropriate information on the case; (c) evaluate whether victims feel they are receiving appropriate and sufficient help/support from the police; (d) establish whether, as a result of the case, victims feel more or less confident in the police.  There are insufficient financial resources to send the questionnaire to *all* the district’s victims of crime so you must select a sample that comprises no more than 10 per cent of all crime victims in the district over the past 12 months.   1. What is the population for this research? 2. What is the sampling frame? 3. What kind of sample will you select? Justify your choice. 4. Identify dependent and independent variables. 5. Produce an appropriate research design. 6. Using the aims outlined above, construct a valid and reliable research instrument.   *Suggested answers are provided at the end of the Chapter.* | |

|  |
| --- |
| **SUMMARY**   * The structure of experimental research generally comprises two stages: the planning stage and the operational stage. * Experimental research begins from a priori questions or hypotheses that the research is designed to test. Research questions should express a relationship between variables. A hypothesis is predictive and capable of being tested. * Dependent variables are what experimental research designs are meant to affect through the manipulation of one or more independent variables. * In a true experimental design the researcher has control over the experiment: who, what, when, where and how the experiment is to be conducted. This includes control over the who of the experiment – that is, subjects are assigned to conditions randomly. * Where any of these elements of control is either weak or lacking, the study is said to be a quasi-experiment. * In true experiments, it is possible to assign subjects to conditions, whereas in quasi-experiments subjects are selected from previously existing groups. * Research instruments need to be both valid and reliable. Validity means that an instrument measures what it is intended to measure. Reliability means that an instrument is consistent in this measurement.   **SUMMARY OF WEB LINKS**  <http://www.randomizer.org/> <http://www.surveysystem.com/sscalc.htm> |

**Further reading**

Kerlinger, F.N. (1986) *Foundations of Behavioural Research,* 3rd edn. Orlando, FL: Holt, Rinehart and Winston. Excellent on the pros and cons of various experimental designs and on quantitative research design in general.

McBurney, D.H. (1998) *Research Methods*, 4th edn. Pacific Grove, CA: Brookes/Cole. Although written for a psychology perspective, a useful quanti- tative approach to research design.

|  |  |
| --- | --- |
| **Suggested answers for Activity 4.1** |  |
| 1. Descriptive. 2. Normative. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 4.2** |  |
| 1. Not a good hypothesis, since it contains the subjective word ‘disappoint- ing’. The statement should contain a parameter capable of measurement. 2. This is a research question (to which there could be a variety of answers) not a hypothesis, capable of being tested. 3. A good hypothesis since it is testable. Levels of patient satisfaction can be measured and we can see whether levels increase, decrease or stay the same. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 4.3** |  |
| 1. This is a quasi-experimental study because there was no opportunity to randomly assign subjects to the condition (pregnancy!). 2. The objective of the research is to examine the impact of teenage preg- nancy on later income levels, educational attainment and general welfare. If teenage pregnancy was evenly spread across all income groups the independent variable of income level would be controlled for. Unfortunately, as we are told, this is not the case. Lower income families tend to have higher incidences of teenage pregnancy – which could confound the results. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 4.6** |  |
| 1. Stage sampling. But note that if the factories vary in size, taking 100 people might constitute a different proportion of each factory. The employees in very large plants, for example, might hold different views to those in the smaller ones. Hence, you might want to weight the results. 2. Stratified random sampling. 3. Purposive sampling. 4. Random sampling. 5. Volunteer sampling. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 4.7** |  |
| 1. The population comprises all the victims of crime within the police district. 2. The sampling frame consists of 10 per cent of the district’s population who were victims of crime during the past 12 months. 3. One approach would be to take a completely random sample by allotting a number to each crime victim and selecting a series of numbers randomly. However, it might be hypothesized that certain groups, for example, the elderly, are highly anxious about crime. Hence, an alternative approach would be to take a purposive sample which focuses more heavily on the older age groups. The results might highlight the perceptions of these groups, but could not be claimed to be representative of crime victims as a whole. 4. The dependent variable is the attitude of crime victims to police handling of their cases. There are many potential independent variables but some might include those identified for study by the research – the speed of police responses to the crime, whether police are seen to be collecting appropriate evidence, the extent of police help and support, etc. | |

**Designing Descriptive and Analytical Surveys**

**5**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Distinguish between descriptive and analytical surveys.**
* **Describe and apply different approaches to both analytical and descriptive surveys.**
* **Select alternative survey data collection methods.**
* **Implement special approaches to maximize response rates to organizational surveys.**
* **Take steps to counteract some of the limitations of survey design.**

In the previous chapter, we looked at experimental and quasi-experimental design, in many senses one of the classic and long-standing methodologies. In this chapter, we examine surveys, today one of the most popular methodologies and widely used in the business and commercial worlds. Surveys are described by Fink (1995b) as a system for collecting information to describe, compare, or explain knowledge, attitudes and behaviour.They are a common methodology in research because they allow for the collection of significant amounts of data from a size- able population. But many surveys go further than this, looking for associations between social, economic and psychological variables and behaviour. Market researchers, for example, may be interested in how changes in income level and status affect people’s spending patterns. The results of surveys, whether commis- sioned by organizations, companies or the government, are frequently quoted in the media. Most surveys are conducted using a questionnaire, but structured observation and structured interviews may also be used. Unlike many other research methodologies, surveys are often a team effort, involving a division of labour between survey designers, interviewers and those who capture the data into computer files prior to analysis.

Surveys fall into two categories: *analytical* and *descriptive*. Analytical surveys take many of the features of experimental, deductive research and so place an emphasis on reliability of data and statistical control of variables, sample size, etc. It is hoped that the rigour of these controls will allow for the generalization of the results. In contrast, descriptive surveys tend to use an inductive approach, often using open-ended questions to explore perspectives. Descriptive surveys may be quite ethnographic in character. If a theory does emerge, it may be tested, subse- quently, using more structured research instruments. This chapter, then, looks at how surveys are planned, the types of designs available, some of the special fea- tures of organizational surveys, as well as some limitations of survey methodology.

**WHAT IS A SURVEY?**

According to Sapsford (1999), a survey is a detailed and quantified description of a population – a precise map or a precise measurement of potential. Surveys involve the *systematic* collecting of data, whether this be by interview, questionnaire or observation methods, so at the very heart of surveys lies the importance of stan- dardization. Precise samples are selected for surveying, and attempts are made to standardize and eliminate errors from survey data gathering tools. The very first survey, the Doomsday Book of 1085, was largely an exercise in counting (people, ownership of land and livestock, etc.) but modern surveys are usually exercises in measurement (often of attitudes). They attempt to identify something about a population, that is, a set of objects about which we wish to make generalizations. A population is frequently a set of people, but organizations, institutions or even coun- tries can comprise the unit of analysis. Since populations often tend to be fairly large, and therefore time-consuming and expensive to survey, we tend to collect data from samples, as we saw in Chapter 4, a portion or subset of the population.

Conducting surveys is now a thriving business, and being on the receiving

end of surveys is often a component of modern life. Companies make use of sur- veys to measure customer attitudes towards their products and services. Educational establishments survey (evaluate) student opinions about courses and programmes as part of their quality assurance processes. Governments and politi- cians pay close attention to surveys of public opinion to gauge the mood of the populace on issues such as transport, education, health, the environment, and, of course, voting intentions. For example, in 1982 the Policy Study Institute obtained UK government funding for a national survey of ethnic minorities, using a sample of 5,000 adults (Hakim, 2000). The survey considered the extent and causes of ‘racial disadvantage’ in relation to residential segregation, housing, education, employment and health care.

A particular form of survey, a census, is a study of every member of a given

population and *the* Census is an official survey of a country’s entire population – in the case of the UK, one that is carried out every ten years. A census provides essential data for government policy makers and planners, but is also useful, for

example, to businesses that want to know about trends in consumer behaviour – such as ownership of durable goods, and demand for services.

An increasingly common focus of surveys is employees’ attitudes. Hartley (2001) reports research showing that in the USA employee surveys are becoming an integral part of human resources strategy. In the UK, in large firms employing over 5,000 people, nearly half have reported using employee surveys. Surveys, then, have moved from being used as barometers of attitudes and opinions, to constituting essential links to business strategy and organizational change.

**TYPES OF SURVEY**

As we have seen, surveys fall into two broad categories: descriptive and analytical.

***Descriptive surveys***

Descriptive surveys are designed to measure the characteristics of a particular pop- ulation, either at a fixed point in time, or comparatively over time. They are designed to measure *what* occurred, rather than *why.* Descriptive surveys are used in a wide range of areas such as market research, public opinion polling, voting intention surveys and media research (ratings surveys). Surveys of this kind have often been used to identify the scale and nature of social problems, including poverty, crime and health-related issues. Hence, descriptive surveys can be the source and stimulus for policy changes and social action.

**Characteristics of descriptive surveys**

While, generally, inductive in approach, it would be entirely wrong to assume that descriptive surveys are devoid of theory. Indeed, reference to relevant theories may be necessary before the research can be formulated. De Vaus (2002) goes further, arguing that good description is the basis of sound theory. Unless something is described accurately and thoroughly, it cannot be explained. Illuminating descrip- tions can highlight puzzles that need to be solved, and thus provide the inspira- tion for the construction of theories. Furthermore, the identification of problems can provide the cornerstone for action.

Descriptive surveys are often undertaken to ascertain attitudes, values and opinions. For example, a survey might examine staff views about whether the organization’s customers seem content with the service they are receiving. Indeed, the working practices of organizations would be a typical subject for descriptive surveys. But as Black (1993) notes, there may be differences between the opinions found through a survey, which is a description of people’s *perceptions*, and the actual reality of practice. In other words, people may articulate a particular view, but in practice behave differently. Hence, caution needs to be exercised in draw- ing conclusions from such surveys.

**Mass descriptive surveys: the opinion poll**

In modern, democratic societies, one particular type of descriptive survey, the opinion poll, has become an essential arm of the government policy making process. Sometimes large corporations also commission their own surveys to check on shifting public priorities and attitudes that could influence government initiatives (Ferguson, 2000).The following Case Study, however, shows how diffi- cult it is for opinion polls to make accurate predictions.

|  |
| --- |
| **Case Study 5.1 Survey lessons from US opinion polls**  Should we trust opinion polls? The track record is patchy because signs that the methods used are failing can be ignored until disaster strikes – like calling the wrong winner in an election! This happened to the *Literary Digest* in 1936.The magazine had been polling since 1916 and getting its predictions acceptably close. In 1932, for example, it predicted Roosevelt’s victory within a fraction of a per- centage point. But in 1936 it predicted a victory for Alfred Landon when Roosevelt won again. So what went wrong?  The problem was that the *Literary Digest* accessed its sample by using telephone directories and car registrations. But Roosevelt’s New Deal coalition had brought minority groups, such as Southern farmers and organized labour, towards his Democratic Party. But these were precisely the kinds of groups under-represented in terms of telephone and car ownership.  The next major polling crisis came in 1948 when they failed to predict the victory of Harry Truman. Statisticians later found that the polls had stopped asking questions too soon. Many people switched their votes at the last minute, largely due to Truman’s effective campaigning. After this, the polls stayed in the field longer.They also replaced quota sampling with probability sampling, meaning that respondents were chosen purely on chance. Polling accuracy improved dramati- cally, and was further improved in the 1970s with the introduction of telephone polling.This was cheaper and therefore allowed for much greater sample sizes (and therefore purer samples).  But in the 1990s the average error (the difference between the final pre- election poll and the winner’s vote) rose to over 3 per cent. Why the rise? Well, a major factor must be the problem of public resistance to telephone interviewing, probably as a result of being burdened with too many junk phone calls. People are wary of strangers calling at inconvenient times.  One result of this has been a growing interest in Net polling. The problem here, of course, is that not everyone is linked to the Internet. The polls try to get around this by giving more weight in the survey to those Internet users who are most like (in key variables such as social groups) non-Internet users. In the 2000 US presidential election some of these Net polls were predicting a win for Gore. Back to the drawing board!  (*Source:* Adapted from Meyer, 2000) |

|  |  |
| --- | --- |
| **Activity 5.1** |  |
| Go to Social Surveys Online at: [http://qb.soc.surreyOnline.uk](http://qb.soc.surreyOnline.uk/)  Click on Surveys to view a wide range of surveys including:   * British Election Surveys * Family Expenditure Surveys * Labour Force Surveys   Also, take a look at Resources.  Now take a look at [http://www.yougov.com](http://www.yougov.com/)  Pay particular attention to the sampling methods. To what extent do you think they could be justified as representative? | |

**From descriptive to analytical surveys**

Often, descriptive surveys might only be the precursor to more detailed analyti- cal studies. For instance, a descriptive survey of UK management attitudes towards sterling currency integration with Europe might reveal the strength of feelings one way or another. But we might quickly come face-to-face with the ‘so what?’ question. If a trend or attitude has been described, what caused it? As Saunders et al. (2000) make clear, descriptive studies in business and management research have their place, but they are generally a means to an end rather than an end in themselves.

In practice, what determines whether a survey is analytical or descriptive is often the size of the sample. If the sample is relatively small, and the research deals with relationships between multiple variables, it is unlikely that any associations found will be statistically significant. In these circumstances, an analytical survey would be of little value so the survey will be largely descriptive.

***Analytical surveys***

As has been pointed out, analytical surveys attempt to test a theory in the field, their main purpose being to explore and test associations between variables. As Oppenheim (1992) shows, analytical surveys take on typical characteristics of experimental research when it comes to dealing with these variables. As was shown in Chapter 4, the survey will have to distinguish between:

* *Dependent* variables – the subject of the research, the gains or losses produced by the impact of the research study.
* *Independent* variables – the ‘causes’ of the changes in the dependent variables that will be manipulated or observed, then measured by the analytical survey.
* *Uncontrolled* variables *–* including error variables that may confound the results of the study. It is hoped that such variables are randomly distributed so any confounding effects are limited.

Controlling extraneous variables can be achieved in a number of ways through careful planning of the survey. They can be controlled, for example, through *exclusion* (such as only using females in the study so as to eliminate the possible confounding effects of gender).Variables can also be controlled by *hold- ing them constant* (for example, by interviewing respondents on the same day so as to eliminate the effects of time). Randomizing can also assist in controlling extra- neous variables, since, if the sample is truly random, any extraneous variables should, in all probability, be represented in the sample in the same proportions as in the population being studied.

|  |  |
| --- | --- |
| **Activity 5.2** |  |
| Take a look at the website for the NOP Research Group at [http://www.nop.org.uk](http://www.nop.org.uk/) and examine some of the surveys conducted. Pay special attention to the size of some of the samples used. Can you pick out any particular designs such as longitudinal or cross-sectional? | |

**STAGES IN THE SURVEY PROCESS**

Before conducting a survey it is essential to understand the phases and steps involved. Conducting a survey is much more than just a process of designing a questionnaire and collecting data. Czaja and Blair (1996) suggest a five-stage process (see Figure 5.1).

***Stage 1: Survey design and preliminary planning***

As with most research strategies, the first step involves the specification of the central research questions that the survey needs to address.These might be articu- lated in a number of different ways, for example:

* A *hypothesis*: Industrial workers are more likely to favour ‘blood sports’ than service-sector workers.
* A *causal hypothesis*: People who like classical music are more likely to visit art galleries.
* A *description*: What proportion of people believe that all first-time offenders should be jailed?

Some research questions may focus on the views or actions of individuals, others on groups, organizations, networks or businesses. In formulating research questions

Decide on information needed

Decide on preliminary analysis approach and sample

Decide sample

Choose survey method

**STAGE 1**

Design

questionnaire

**STAGE 2**

Pilot survey

**STAGE 3**

Amend

questionnaire and sample

**STAGE 4**

Train

interviewers

**MAIN SURVEY**

Send explanatory

letter

**STAGE 5**

Edit, code and tabulate

Analyse

Choose data processing method

Examine resources

Research questions

Write up final report

Structure and wording

Review existing information on topic

**FIGURE 5.1** STAGES IN THE SURVEY PLANNING PROCESS (ADAPTED FROM CZAJA AND BLAIR, 1996)

it is important that they achieve a sense of specificity and focus. De Vaus (2002) suggests that this can be achieved by asking the following questions:

* + What is the *time frame* for the survey? Do we need to know about the issue now, in the past, or do we need to project trends into the future?
  + What is the geographical *location* of the research? Is it local, regional, national or international?
* Is the focus of the research broad and general, or does it need to *compare* and *specify* patterns among sub-groups? For example, in looking at absentee levels in a country, are we also interested in a breakdown of data by region, sector, industry or gender?
* What *aspect* of the topic is of interest? If, for example, the research issue is e-commerce, are we interested in trends in its growth, companies who do (and who do not) use e-commerce and why, or what kinds of software platforms firms are building their e-commerce Web system on?
* How *abstract* is the research interest? Is the main focus of the research on the gathering of raw data, say, the sale of expensive consumer durables, or what this might reveal about general consumer confidence and standards of living?

In writing research questions for surveys, it is important to establish the research’s frame of reference. Hence, if we find that in a customer satisfaction sur- vey, 56 per cent of customers expressed themselves as ‘broadly satisfied’ with the service they were receiving, what are we to make of this figure? It would be help- ful to know before we start the survey the benchmark criteria for ‘good’,‘bad’ and ‘indifferent’ performance. One way of achieving this is by benchmarking against other companies in the field. If we found, for example, that no industry competi- tor had achieved a satisfaction rate above 40 per cent, then any figure above 50 per cent would look relatively good.

Collecting benchmark data, of course, is not always a simple exercise. If we need data on competitors they are unlikely to give it to someone working in a rival organization.There are a number of possible solutions, including the use of:

* Overseas organizations. Concentrate on overseas organizations who are in the same business or service but not in direct competition (due to geographical distance). Sometimes organizations might have websites that offer data on their mission, structure, products and services, etc.There may be articles about the organization in trade or professional magazines or journals.
* Organizations in different industries that share similar problems or have busi- ness activities in common. A researcher, for example, working for an airport might research customer satisfaction data for bus or train companies.The chal- lenge here is to show how the lessons from a related but different industry can be transferred to the target area for the research.

Whatever the focus of the study, one of the key issues is the selection of the *sample*. For example, in surveying attitudes of residents towards a city transport system, do we contact those who live in the city centre, in the suburbs, or also include people who commute into the city from outlying towns? What age groups do we use? Do we only count people who are 18 years old and above? What about young adolescents, say, above the age of 14 who also use the transport system? There needs to be an age cut-off point somewhere, so it is sensible to limit the sample to those people who are capable of providing accurate information.

Another important issue is the selection of the *sampling frame*, that is, the source or sources that include the population members from which the sample is

to be selected. For general population surveys, the most common source for the sampling frame is telephone directories. If we were to conduct a survey of teach- ing staff in a university, the sampling frame would be the names held on person- nel records. As we saw in Chapter 4, of central importance is the question of how much the sampling frame is representative of the eligible population. If we take the example of telephone directories, obviously not everyone has a telephone. Telephone ownership tends to be lower for poorer social groups and in certain localities, and these people may hold different views from those of telephone- owning households. How much bias does this generate in a survey? Czaja and Blair (1996) suggest that most researchers are not too concerned by this threat because non-telephone households are proportionately so small (at least in most industrialized countries).

At this preliminary design stage other factors that need to be considered are

the budget for the study and the time available. In general, the cheapest form of survey is through using mail, then telephone surveys. Face-to-face surveys are the most expensive, particularly for large-scale studies, when interviewers will have to be recruited and trained. This is also the stage at which careful thought needs to be given to how the data are to be collected, captured and analysed.

***Stage 2: Pre-testing***

This stage involves the testing or piloting of elements such as the sampling frame (is it representative of the target population?), survey questions and data collection tools. It is likely that several drafts of the research tool will have to be tested before a satisfactory version is reached. If resources permit, focus groups can be used to discuss the validity of individual questions, or to evaluate the overall design of the survey. If interviewers are going to be used, they will require training and debrief- ing to ascertain whether the training has been successful. Only when it is felt that the research instrument is ready will it be pre-tested on a group of, say, 20–40 interviewees.

***Stage 3: Final survey design and planning***

The pre-testing will inform planners as to what changes need to be made to the various elements, such as the choice and size of sampling frame, the questionnaire itself, interviewer training, data coding and plans for data analysis.A common occur- rence at this stage is to find problems with the representativeness of the sampling frame. For example, it might be found that the responses of a particular subgroup (say, male nurses) were quite different to the main group (female nurses).A decision would have to be made (within the constraint of time and budgets) on whether to increase the size of this sub-group sample. Of course, if the budget is fixed, this implies that the size of the other sub-group (female nurses) will have to be reduced. Researchers, then, need to consider what impact this may have on the reliability of the results.

***Stage 4: Data collection***

Apart from the data collection and coding process itself, at this stage one of the most important activities is to monitor the rate of completed interviews and the rate of non-response. The latter should be measured by specific category, each of which has different implications for the research, namely:

* Non-contacts (try to re-contact).
* Refusals (try to ascertain reasons for refusal).
* Ineligibles (replace by eligible respondents).

If interviews are being conducted, the performance of individual inter- viewers needs to be checked for their success rate at achieving interviewee coop- eration and the quality of the interview data. For example, are there some interviewers who consistently fail to get all questions in the questionnaire com- pleted? Is this accidental or does it point to a problem? The importance of reduc- ing sources of error will be explored in more depth later in the chapter.

***Stage 5: Data coding, analysis and reporting***

At the coding stage, a number is assigned to the responses to each survey ques- tion, and these are then entered into a data record that includes all the responses from one respondent. Each respondent is then given a unique identity number. Before data analysis can begin the data have to be ‘cleaned’, that is, checked for obvious errors. If, for example, a question has only two possible responses,‘Yes’ ( 1), or ‘No’ ( 2), but the data file contains the number 3, then clearly an error has been made and must be corrected.

|  |  |
| --- | --- |
| **Activity 5.3** |  |
| Take a survey that you have conducted or intend to carry out. Are there any steps in Figure 5.1 that you would omit? If so, justify your decision. | |

***Survey methods***

Saunders et al. (2000) comment that the design of a survey questionnaire will depend on how it is to be administered, that is, whether it is to be self- administered, or interviewer-administered.Within these categories, they distinguish between six different types of questionnaire (see Figure 5.2). Of these, the most commonly used are postal questionnaires, structured (face-to-face) interviews and telephone questionnaires, although the use of the on-line questionnaire is becoming increasingly popular. The starting point for selecting between them is the purpose of the survey and the kinds of questions that the research intends

**Questionnaire**

***Self-administered***

***Interviewer-administered***

Postal

questionnaire

Delivery and

collection questionnaire

Structured

interview

Telephone

questionnaire

Online

questionnaire

Focus group

**FIGURE 5.2** TYPES OF QUESTIONNAIRE (ADAPTED FROM SAUNDERS ET AL., 2000)

to ask. Resources such as time and budgets are also part of the decision making equation.

***Self-administered questionnaires***

**Postal questionnaires**

Mangione (1995) suggests that postal surveys are best considered when:

* The research sample is widely distributed geographically.
* Research subjects need to be given time to reflect on their answers.
* The research subjects have a moderate to high interest in the subject.
* The questions are mostly written in a close-ended style.

Certainly, postal questionnaires are most suited to situations where the questions are not over-elaborate and require relatively straight-forward answers. They also allow respondents time to consult documents and to complete the questionnaire in their own time. Respondents may also be more amenable to answering personal and del- icate questions through this more anonymous medium. It is possible that answers may be more honest than when faced by an interviewer, whom they may be tempted to impress by exaggerated responses or a socially desirable response (SDR). Postal questionnaires are normally one of the cheapest methods to use and can achieve relatively high response rates when the topic is relevant to the audience.

Kerlinger (1986), however, warns that the postal questionnaire has serious drawbacks unless it is used with other techniques. Problems include a low return

rate and an inability to check the responses that have been given. He warns that response rates as low as 40 or 50 per cent are common, which means that the researcher has to be careful about making strong generalizations on the basis of the data. Czaja and Blair (1996) also caution that postal surveys are prone to response bias because of lower returns from people with low levels of literacy and education. This group are more compliant with, say, interviews, because no demands are made on their reading abilities. If response rates are low, those responding may be doing so on the basis of some interest or commitment to the subject, making them a volunteer rather than a genuinely random sample. Kerlinger (1986) argues that with postal questionnaires only a response rate of 80 or 90 per cent is acceptable, and every effort should be made to achieve this.Ways of improving response rates are explored later.

**Delivery and collection questionnaires**

Delivery and collection questionnaires are simply delivered by hand to each respondent and collected later. This has the advantage over postal questionnaires in that there is some direct contact with potential respondents, that might in turn induce a greater proportion of people to complete the questionnaire. But like all questionnaires, this will largely be determined by how interesting the audience finds the survey. One of the considerable disadvantages of this approach, obviously, is the time and effort of delivering and collecting the questionnaires.

**Online questionnaires**

Online questionnaires are a relatively new, but an increasingly popular way of conducting surveys. Essentially, there are two ways in which an online question- naire can be delivered – as a word processed document attached to an e-mail, or via a website.With e-mails, the researcher will have to know the e-mail addresses of respondents so that the sample can be targeted.With Web-based surveys, if the site is not password-protected, there is no control over who completes the survey form. This means that respondents will comprise a volunteer rather than a ran- dom sample, with corresponding threats to the validity of the data. Conversely, if the site is password-protected, this presents a further barrier to respondents and could tend to push the response rate down. The problem of security is partially solved if the research is focused on just one organization that possesses an intranet, with firewalls to block access from external visitors. But again, the researcher may find it difficult to control who responds.

Being more impersonal, it might be assumed that on-line surveys are less

prone to elicit socially desirable responses (SDRs) that might bias the results. Hancock and Flowers (2001), however, report that while some studies have sug- gested that computer responses are more candid and less influenced by social desirability than responses provided on paper (such as postal questionnaires and structured interviews), their own research did not support these findings. At best, online responses were no worse. Online surveys, then, should probably be chosen more on the basis of lower costs, than for the reduction in response bias.

|  |  |
| --- | --- |
| **Activity 5.4** |  |
| For an example of software tools that you can use to build an online survey, see each of the following:  <http://www.infopoll.com/> <http://www.surveywriter.com/HomePage.html> | |

In addition to constructing online questionnaires, Web-based surveys can also be carried out via a Web discussion group. Here a question, or set of questions, can be posted to the group in the form of a simple e-mail. Since discussion groups (such as listservs) are set up around specific discussions, you need to be sure that the research subject is of relevance and interest to the group.The next Case Study pro- vides an example of how a discussion group was used to conduct a research study.

|  |
| --- |
| **Case Study 5.2 Conducting a survey through an e-mail discussion group**  Two researchers were interested in the views of fellow researchers on the safety procedures necessary in being a lone researcher. To gather data, they chose six e-mail discussion groups. Initially they sent an e-mail requesting only basic informa- tion, but after an encouraging response, they sent a more structured set of ques- tions in a second e-mail. This requested details on respondents’: gender; age; occupation; area of work; country of fieldwork; whether they had been given safety guidelines; whether they had experienced incidents while conducting research; and recommendations for ‘best practice’ when researching alone.  A total of 46 responses were received, of which 13 were from males and 33 from females, with ages ranging from the late 20s to the early 60s.Thirty-one were from the UK (possibly resulting from the UK bias of four of the discussion lists). Four were from Australia, six from the USA, and one from each of Finland, Norway, Sweden, Italy and Canada. Some of the replies were quite detailed.  While the sample could not be regarded as representative, this survey method proved to be cheap, speedy at gathering data, and illuminative in terms of the quality of data it elicited. Also note its international character.  *Source:* Adapted from Kenyon and Hawker, 1999 |

|  |  |
| --- | --- |
| **Activity 5.5** |  |
| Take a look at some of the e-mail discussion groups available at: <http://www.mailbase.ac.uk/> | |

***Interviewer-administered questionnaires***

**Structured interviews**

Structured, face-to-face interviews are probably the most expensive survey method because they require large amounts of interviewer time, a significant pro- portion of which is often spent travelling to and from interviews. The question- naires on which the interviews are based can be difficult, time-consuming and costly to produce. However, response rates are usually slightly higher than for methods such as telephone interviews, particularly if a letter can be sent in advance, explaining the purposes of the structured interview. Response bias is also fairly low because refusals are usually equally spread across all types of respondent. Structured interviews are the most effective method for asking open questions and for eliciting more detailed responses. Like telephone interviews but unlike postal questionnaires, structured interviews allow for the use of probing questions in response to unclear or incomplete answers.

Interview schedules may begin with factual information: the respondent’s

sex, marital status, education, income, etc. This is often referred to as the ‘face sheet’ and is vital for two reasons; first, it allows for the later studying of relation- ships between variables – for example, an attitude towards an organization’s prod- uct or service and respondents’ educational background, or income level. Secondly, it allows for some rapport to be built with the interviewee at the start of the interview.The personal interview helps in ascertaining a respondent’s rea- sons for doing something or holding a personal belief. Of course, there may be differences between what people believe and what they do, and between what they think they do and their real actions in practice.There is also the problem that respondents are more likely to over-report socially desirable behaviour than when answering through postal interviews.

**Focus group interviews**

The use of focus groups allows for a sample of respondents to be interviewed and then re-interviewed so that attitudes and behaviours can be studied over a period of time (a longitudinal survey).An advantage of focus groups is that they allow for a variety of views to emerge, while group dynamics can often allow for the stim- ulation of new perspectives. Indeed, sometimes these new perspectives may provide the basis for a survey.

Focus groups are increasingly used in the political arena and are also a com- mon tool in market research.Within a business or organization, they can be use- ful in engaging the commitment of people, especially in circumstances where there is cynicism or hostility towards the research theme.

**Telephone surveys**

The telephone survey is the most widely used of all the survey methods. One factor in its favour is the growth of household telephone ownership, reaching over 90 per cent in some countries. Indeed, with the spread of cellphones, many

households are now multiple telephone owners. Most surveys are currently conducted through home telephones, but it is likely that cellphone surveys will spread, especially when they want access to younger age groups, for whom the cellphone is now a social accessory.

Response rates for telephone surveys are relatively high (60–90 per cent when repeated callbacks are made) because most people are willing to be inter- viewed by telephone (although recall the resistance to junk calls noted in Case Study 5.1). In contrast to postal surveys, it becomes possible for interviewers to convince people of the significance of the research or to reschedule the interview for a more convenient time. If people prove difficult to contact, Czaja and Blair (1996) recommend five to nine callbacks on different days of the week and at dif- ferent times of day. With some groups, for example, older adults, making contact through either an interview or postal questionnaire prior to a telephone follow- up can boost the response rate (Wilson and Roe, 1998).

One of the limitations of telephone interviews is the type of questions that can be asked. Questions need to be short and fairly simple, and the kinds of response choices few and short. Sentences should be limited to 20 words or less and language kept as simple as possible. If calling groups who are not conversant with a country’s first language, then it is prudent to use interviewers who can speak the respondent’s language.

|  |  |
| --- | --- |
| **Activity 5.6** |  |
| In deciding between the various survey methods, make a list of the advan- tages and disadvantages of each. Which, on balance, is the best for your own survey? Justify your choice. | |

**CONDUCTING A STAFF OPINION SURVEY**

Perhaps the most common survey in business is the staff opinion survey, which can provide valuable insights into many elements of an organization’s operations, including working practices, communications, management structures, leadership, general organization, and customer relations. For example, a staff survey might be invoked to assess attitudes towards proposed changes, or to predict problems before they occur, or to ascertain what actions need to be taken to improve staff morale, confidence and loyalty.Their value can be greater if a survey can be com- pared with a similar one conducted in the past (a longitudinal design), or with surveys conducted in similar organizations, or with other sources of benchmark- ing data. Whatever the subject of the staff opinion survey, it is essential that the results are fed back to all staff, particularly those who provided information, otherwise the response rates to future surveys is likely to be low.

As Figure 5.1 showed, all surveys must be conducted according to a care-

fully devised plan, and staff opinion surveys are no exception. Indeed, because they involve contacting many people within an organization, it is essential that, if

‘political fallout’ is to be avoided, they must be seen to be professionally designed and conducted.This is also essential in assisting a high return rate – vital if the organi- zation’s policy is to be influenced by the results.We will look in turn at the typical stages involved in a staff opinion survey, many of which should, by now, be familiar.

***Aims and objectives***

An organization must have a sound reason for wanting to conduct the survey in the first place, since money and resources are going to be used in its planning and implementation.The anticipated results need to outweigh the costs of the survey. Once the organization is satisfied that this is the case, a concise set of aims and objectives should be drawn up. If, for example, a company has just taken over a rival firm, it might want to conduct a survey among the new set of employees on how they have reacted to the take-over and their perceptions of their new employers (including their fears and anxieties).A well-defined set of aims and objectives pro- vide a basis for also determining the scope and structure of the survey and for evaluating its effectiveness.

***Planning the survey***

**Scope**

Assessing the scope of the survey is important. It is relatively easy to construct long surveys that attack a range of themes, none of which fits comfortably together. The reports that result from surveys of this kind will have difficulty in providing coherent, focused recommendations for implementation. One approach is to start with a broad but shallow survey that addresses a range of topics, but not in significant depth, to highlight key themes. This could be followed with a detailed survey on prime concerns. If one of these problems was, say, the emer- gence of a key competitor, the survey could focus on corporate direction, customer focus and innovation. If, on the other hand, the problem was the emer- gence of a high staff turnover rate, the scope of the survey could be confined to employee appraisal systems, motivation, pay and benefits, and training and development.

**Audience**

We saw in Chapter 4 that, often for practical reasons, representative samples must be chosen from the population. With staff surveys, however, it is often possible (and desirable) to contact the entire population. In designing a survey for a spe- cific audience, it is necessary to consider their traits and attributes. For example, their educational and literacy levels (including first language), qualifications, expe- rience in the sector or business, technical knowledge and national culture. A sur- vey, say, that asked respondents to provide information on their ‘Christian’ name, would be offensive to people of non-Christian religions, or of no religious

persuasion. No matter what the social or ethnic composition of an organization, survey designers need to be aware of multicultural sensitivities.

**Timing**

Even short-term changes in an organization can have an effect on staff morale and hence the chances of people being willing to complete a survey. This can also include rumours, whether substantiated or not, of changes about to occur. It is important to conduct staff opinion surveys during periods when the organization is not affected by these one-off developments.This is particularly important when the results are going to be compared with those from a previous survey. It will almost certainly help to pilot the survey first to make sure that there are no embarrassing misunderstandings. Staff opinion surveys are high profile!

**Publicity**

Taking Dillman’s (2000) advice, advance notice of the survey is important for assisting the return rate. Employees need to know why the survey is being carried out and what will be done with the results. A guarantee of confidentiality is, of course, essential. Publicity for the survey and its credibility will be most effective if this comes from the highest level of the organization, particularly if this is the organization’s chief executive or managing director. For many organizations, this publicity will be delivered via its intranet, or staff newsletter.

**Selecting research tools**

As we have seen earlier, there are a number of alternative survey methods, and any staff opinion survey will benefit from the use of a variety of approaches. Hence, a typical survey may use not only paper-based questionnaires, but questionnaires delivered via e-mail and the intranet. Interviewer-administered questionnaires are less likely to be used for staff opinion surveys due to the time and costs involved as well as the lack of confidentiality.

**Analysing the results**

The impact of a survey is enhanced if comparisons can be drawn between differ- ent categories of respondent in the organization. Hence, for the analysis to have much significance, the survey should be aimed at capturing the opinions of staff in different departments or business units, functions, locations, age groups, levels of seniority, length of service, etc.

Care should be taken, however, to ensure that the use of these categories is accurate. In the modern world, organizations change quickly. Departments get renamed, moved or closed down. New departments or sections open up but news of this may not be generally shared throughout the organization, especially large ones. People get promoted or leave the organization.You need to ensure that you are working from the latest records (sampling frame) of organizational information.

***Using the results***

**Reporting results to management**

Many staff opinion surveys may require two different kinds of report. If the organization is a large company, a Corporate Report might be needed at top management level.The Corporate Report should include:

* An overview of the results for the whole organization.
* A comparison, if possible, between the current survey and previous surveys to illustrate trends over time.
* An executive summary that features key points, conclusions and recommendations.

Corporate Reports may also sometimes include the results of similar surveys con- ducted in other companies to establish benchmarks. An essential feature of a Corporate Report is that it should be easy to read, and so presenting data in tabular and graphical form is very important.

Another kind of document, a Management Report, is needed by the managers of individual business units, divisions, departments or locations. The Management Report might include a comparison between:

* Different business units, departments or locations within the organization.
* The views of people of different grades or levels.
* Different age ranges or length of service.

For very large surveys in complex organizations there can be quite a signifi- cant time gap between the collection of the data and the publication of the report. In this case the publication of a short one- or two-page Flash Report, summarizing the findings, could be useful, particularly if these could be broken down, by depart- ment or section. In some cases this could comprise a small set of Web pages that are linked from the ‘What’s New?’ section of an organization’s main Web home page.

**Reporting the results to employees**

Staff opinion surveys create expectations amongst employees, hence, it is essential that results are disseminated as soon as possible.This should include those cases where the results of the survey are not in line with management hopes or expectations. Not to publish a report will only fuel resentment and make any future staff opinion survey difficult to implement. The best approach is for management to show that they are willing to acknowledge the results and to take action. Reporting results to staff could be through staff newsletters, bulletin boards, e-mails or team meetings – or all of these.

**Implementing the results**

For the results of a staff opinion survey to have any lasting impact it is necessary that a planned and coherent series of actions be conducted.These could include:

* + The appointment of a director or senior manager responsible for coordinat- ing follow-up actions across the organization.
  + The appointment of a senior manager responsible for coordinating follow-up actions in each division or department.
  + Agreement on a timetable and process for implementation.
  + Agreement on a system for monitoring the implementation of recommenda- tions stemming from the survey and for communicating the effectiveness of the implementation.

**REDUCING SOURCES OF ERROR**

In an ideal world, the selected sample exactly mirrors all facets of the target pop- ulation. Each question in the survey is clear and precise and captures the sphere of interest exactly. Every person selected for the sample agrees to cooperate; they understand every question and know all the requested information and answer truthfully and completely. Their responses are accurately recorded and entered without error into a computer file. If only real world surveys were like this! In the real world, gaps and distortions in the data become sources of error.

The two main sources of error are *variance* and *bias*. Variance results from different measures occurring in repeated trials of a procedure. One of the most common sources of this is sampling error (see next section).Variance can also refer to the variability of the dependent variables in a study that cannot be associated with changes in the independent variable. McBurney (1998) suggests that changes in the dependent variable associated with changes in independent variables is fine, but variance is an example of ‘bad’ variability’ because it distorts the data and should be controlled. Other sources of variance are the percentage of respondents who can be contacted for an interview, or the number of refusals to answer a particular question.

Bias occurs when a measurement tends to be consistently higher or lower than the true population value. If, say, we conducted a survey of income levels in a community, there might be a tendency for those on lower incomes to report that they earn more due to social embarrassment. Conversely there might also be a ten- dency for wealthier social groups to report lower income levels than they earn, per- haps because they subconsciously fear the listening ear of the tax authorities!

***Sampling error***

Sampling error, as we have seen, is one of the sources of variance. If the popula- tion for the study is split between males and females, even a random sample can finish up with, say, 52 per cent females and 48 per cent males. A common source of sampling error, however, lies with sampling frames.We would like the frame to list all members of the population that have been identified, and to exclude all others. Unfortunately, this is often not the case. One problem is that of *under- coverage*, where people are missing from the sampling frame. For example, if telephone

directories are used as sources of the sampling frame some groups of people may have their numbers excluded from the directory. This is not a problem if the under-coverage is random, but poses problems if the exclusion is more prone amongst some groups than others. Furthermore, the sampling frame may not include people who have just moved house. This is not problematic if such peo- ple are typical of the population as a whole, but, again, becomes an issue if they are different in terms of key characteristics.

A reverse problem is that of *over-coverage* where the sampling frame contains people who are not members of the target population. This occurs, for example, when quite generalised sampling frames are available (such as telephone directo- ries, or membership lists of clubs or associations) but specific groups are required for the sample.This difficulty can be overcome in several ways. One is to contact members of the sampling frame and ascertain whether they belong to the required sample. Another is to design the questionnaire or interview schedule in such a way that ineligible respondents are identified early and screened out.

|  |  |
| --- | --- |
| **Activity 5.7** |  |
| To calculate sampling error for a given size of sample, population and confi- dence interval, explore the following website calculator:  <http://www.dssresearch.com/SampleSize/sampling_error.asp> | |

***Data collection error***

One of the simple solutions to reducing error at the data collection stage is main- taining a robust record-keeping system so that the amount of missing data can be minimized. At the unit level (person or household), records will include details of all those who have responded, non-respondents and follow up mailing or inter- view details, and the number and timings of re-attempted telephone calls. Apart from well-organized follow-up processes, non-response can also be reduced by making questionnaires easy to answer. In the case of interviews, non-respondents can be re-contacted by more experienced and persuasive interviewers.

In addition to non-response, missing data is also a problem. In postal surveys there are several ways of coping with missing data:

* Ignoring the items and code as ‘missing’ in the data set.
* Trying to determine what the answer should be.
* Re-contacting the respondent.

The choice of steps taken partly depends on the value of the missing data. If it is of central importance to the study, then rather than ignoring it, or guess- ing what it might have been, the best step is to try to contact the respondent. Copas and Farewell (1998) discuss some of the statistical methods for dealing with non-response when these gaps in the data cannot be ignored. If the level of data

loss is small, however, and of relatively low importance, then it may be safe to ignore the problem.

***Improving response rates***

To improve low response rates it is often necessary to locate their causes. Dillman (2000) suggests that low response rates may result from:

* Difficulties in defining the organizational entity. Does the survey deal with individual ‘units’ of the organization or the organization as a whole?
* Problems in getting to the targeted correspondent. In large organizations, for example, senior managers may have their post opened by administrative staff and personal assistants who may make the decision on whether the survey is passed on for completion.
* Organizations having a policy of not responding to surveys.
* Data sources needing to be consulted, taking up time, even if records are avail- able and not confidential.

In general, response rates will be higher if the respondent has the authority to respond, the capacity to respond (access to the information) and the motiva- tion to respond (it is in his or her interests to do so). Dillman suggests that a num- ber of factors are critical to achieving a high return rate from organizational surveys.

* Identifying the most appropriate respondents and developing multiple ways of contacting them.This is particularly helped if names and job titles are known in advance. Prior telephone calls can help here, and can also assist in identify- ing where in the organization the survey should be sent.
* Planning for a mixed-mode design, using not only a questionnaire but other forms of contact such as e-mails or the telephone.While surveys targeted at indi- viduals may require about five contacts, organizational surveys may require more.
* Developing an easy-to-complete questionnaire with embedded instructions on how to complete the questions (see Chapter 8).
* Conducting on-site interviews to help tailor the questionnaire to the knowl- edge and cognitive capabilities of the audience. This may also help identify questions that are too sensitive.
* Targeting organizational surveys on gatekeepers if possible.
* Being cautious about the use of financial incentives (unlike individual sur- veys), as this may not be ethically acceptable in some organizations.

Jobber and O’Reilly (1996), however, do suggest the use of direct incen- tives for responding. Table 5.1 illustrates data on monetary incentives taken from the authors’ analysis of 12 studies. Even though the sums are relatively modest, the act of ‘giving’ helps to build an obligation to respond on the part of the recipient. Non-monetary incentives include the use of gifts such as pens or pocket-knives,

**TABLE 5.1** METHODS FOR INCREASING RESPONSE RATES WITH POSTAL

|  |  |
| --- | --- |
| QUESTIONNAIRES |  |
| **Treatment** | **Response increase over control** |
|  | **(percentage points)** |
| Prior telephone calls | 19 |
| Monetary incentives |  |
| 10 cents (US) | 17 |
| 25 cents (US) | 19 |
| $1 (US) | 26 |
| 20p (UK) | 15 |
| Non-monetary incentives |  |
| Pen | 12 |
| Pocket knife | 15 |
| Stamp business reply | 7 |
| Anonymity (in-company) | 20 |
| Anonymity (external) | 10 |
| Follow ups | 12 |

*Source*: Adapted from Jobber and O’Reilly, 1996

but the data suggest that these are slightly less effective than direct monetary incentives. When using pre-paid envelopes for the return of questionnaires, evi- dence suggests that stamped rather than business reply envelopes elicit the larger response. Assurances of anonymity can also have an impact, whether the survey is organized from within the organization or from the outside. Finally, it makes sense to follow up any non-respondents with a letter and questionnaire.

***Reducing item non-response***

At the item (question) level, missing data may be far from random and pose a threat of bias to the study. For example, people may refuse to answer questions that are seen as intrusive or sensitive, or they simply may not know the answer. In interviews it is essential that interviewers are skilled in handling non-response to individual questions.This is helped by interviewers being able to remind respon- dents about the confidentiality of their answers (if they believe that the problem is one of sensitivity). Mangione (1995) argues that, for postal surveys, any prob- lem of non-response should have been picked up at the piloting stage where it should have been clear which questions were giving respondents a problem.This is particularly the case with attitude surveys where subjects do not feel that their views have been represented in the questions or they dislike the way in which potential responses are phrased.

***Reducing interviewer error***

Unskilled, untrained or inexperienced interviewers can also be a source of error due to the way in which they handle the interview. The key is that the

respondent should answer against the categories that are presented, and no other. So if these categories are ‘Strongly agree’, ‘Agree’, ‘Disagree’ and ‘Strongly disagree’, or ‘No response’, these are what are marked down and coded on the interview schedule. If such responses are not forthcoming, the interviewer responds with a probe, a question designed to elicit an acceptable response. So, say a respondent answered:‘Yeh, you’re absolutely right!’ the cor- rect probe is: ‘Would that be …’ [read the categories again]?’ The incorrect probe would be: ‘So, would that be “Strongly agree”, then?’, as this, obviously, would be biasing the response.

**ETHICS AND GOOD PRACTICE IN SURVEY DESIGN**

As we saw in Chapter 3, two of the essential principles of ethical conduct are informed consent and the protection of confidentiality, and these apply to the use of surveys as to any other research method. This means that respondents must be told about the nature and purposes of the survey, who is sponsoring it and how much of their time will be required in answering it. They should also know about the purposes to which the survey data will be put. Subjects should take part purely voluntarily and not as a result of pressure being imposed on them. In protecting confidentiality, care must be taken to ensure that data sets or the results of the study do not allow individuals to be iden- tified. Sampling frame lists should not be passed on to third parties, including other researchers, without the consent of survey participants. Even if consent is given, care must be taken to remove all identifying features that could link specific data to individuals. When research is being conducted by professional survey researchers, these kinds of principles are usually codified into a set of ethical guidelines or rules. The next Activity provides an opportunity to eval- uate some examples.

|  |  |
| --- | --- |
| **Activity 5.8** |  |
| Take a look at the American Association of Public Opinion Research for both the *Best Practice for Survey and Public Opinion Research* and *Code for Professional Ethics and Practices* at:  <http://www.aapor.org/>  Then examine the following sites:   1. World Association of Public Opinion Research at: [http:www.unl.edu/WAPOR/ethics.html](http://www.unl.edu/WAPOR/ethics.html) 2. The World Association of Research Professionals at: <http://www.esomar.nl/codes_and_guidelines.html> | |

|  |
| --- |
| **SUMMARY**   * Surveys are a common research tool because they allow for the collection of large amounts of data from large samples. * Stages in survey design include the definition of research objectives, questionnaire design, piloting, survey distribution, coding and analysis. * There are, essentially, two kinds of survey: analytical and descriptive. Descriptive surveys can provide illuminating data which may provide the basis for more detailed analytical investigations. Analytical surveys are capable of finding associations between dependent and independent variables and between the independent vari- ables themselves. * Survey methods include self-administered questionnaires (postal, delivery and col-   lection and online) and interviewer-administered questionnaires (structured, focus groups and telephone). Postal and online questionnaires are usually the cheapest to use, but interviewer-administered questionnaires allow interviewers to explore issues of non-response and to follow-up with probes.   * Sources of error include variance and bias. To reduce sources of error, steps must   be taken to minimize under-coverage and over-coverage in sampling frames, and to minimize the amount of missing data, including non-response to the survey and to individual items.   * In encouraging high response rates, care must be taken to abide by research   ethics in not pressurizing people to participate or to answer questions that they find intrusive.  **Summary of web links**  <http://www.aapor.org/> <http://www.dssresearch.com/SampleSize/sampling_error.asp> <http://www.esomar.nl/codes_and_guidelines.html> <http://www.infopoll.com/>  <http://www.mailbase.ac.uk/> [http://www.nop.org.uk](http://www.nop.org.uk/) [http://qb.soc.surrey.ac.uk](http://qb.soc.surrey.ac.uk/) <http://www.surveywriter.com/HomePage.html> <http://www.unl.edu/WAPOR/ethics.html> [http://www.yougov.com](http://www.yougov.com/) |

**Further reading**

Czaja, R. and Blair, J. (1996) *Designing Surveys*: *A Guide to Decisions and Procedures*. Thousand Oaks, CA: Sage. An excellent introduction to the various survey methods, plus practical advice on survey design and writing questionnaires.

De Vaus, D.A. (2002) *Surveys in Social Research*, 5th edn. London: George Allen & Unwin. One of the most comprehensive texts available, it includes use- ful advice on constructing and administering questionnaires for surveys and details of statistical tests used in survey analysis. An added bonus is the presentation of many useful websites.

**Designing Case Studies**

**6**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Describe the purpose of case studies.**
* **Plan a systematic approach to case study design.**
* **Recognize the strengths and limitations of case studies as a research method.**
* **Compose a case study report that is appropriately structured and presented.**

We saw in Chapter 5 that surveys are used where large amounts of data have to be collected, often from a large, diverse and widely distributed population. In contrast, case studies tend to be much more specific in focus.While surveys tend to collect data on a limited range of topics but from many people, case studies can explore many themes and subjects, but from a much more focused range of people, organizations or contexts. The case study method can be used for a wide variety of issues, including the evaluation of training programmes (a common subject), organizational performance, project design and implementation, policy analysis and relationships between different sectors of an organization or between organiza- tions. According to Stake (2000), case studies can prove invaluable in adding to understanding, extending experience and increasing conviction about a subject. Yin (1993) is insistent that the case study approach can be used as both a qualita- tive *and* quantitative method. However, just a brief look at case studies shows why they are more often used qualitatively.Yin (1994) defines the case study as

*… an empirical inquiry that*

* *Investigates a contemporary phenomenon within its real-life context, especially when*
* *The boundaries between phenomenon and context are not clearly evident.* (Yin, 1994: 13)

Case studies, then, explore subjects and issues where relationships may be ambiguous or uncertain. But, in contrast to methods such as descriptive surveys, case

studies are also trying to attribute *causal* relationships and are not just describing a situation.The approach is particularly useful when the researcher is trying to uncover a relationship between a phenomenon and the context in which it is occurring. For example, a business might want to evaluate the factors that have made a recent merger a success (to prepare the ground for future mergers). The problem here, as with all case studies, is that the contextual variables (timing, global economic cir- cumstances, cultures of the merging organizations, etc.) are so numerous that a purely experimental approach revealing causal associations would simply be unfeasible.

The case study approach requires the collection of multiple sources of data but, if the researcher is not to be overwhelmed, these need to become focused in some way.Therefore case studies benefit from the prior development of a theoretical posi- tion to help direct the data collection and analysis process. Note, then, that the case study method tends to be deductive rather than inductive in character (although, as we shall see, this is not always the case). It is also, contrary to popular opinion, often a demanding and difficult approach, because there are no particular standardized tech- niques as one would find, say, with experimental design.Yin (1994), one of the author- ities on case study research, who we will refer to extensively in this chapter, also stresses the wide range of skills and flexibility required by case study investigators.

**WHEN SHOULD WE USE CASE STUDIES?**

The case study method is ideal when a ‘how’ or ‘why’ question is being asked about a contemporary set of events over which the researcher has no control. As Table 6.1 shows, ‘what’, ‘who’ and ‘where’ questions are likely to favour a survey approach, or the use of archival records (unobtrusive measures – see Chapter 10), where it is important to show the incidence of a factor. So, a business that needs to identify how many of its workforce are aged 55 or more, will either turn to its human resource records or, if these are so fragmented as not to contain this kind of information, conduct a survey amongst its employees. This would reveal *who* and *where* these older workers were located. If, however, the organization wanted to know *how* an ageing workforce affected its business, a case study would be able to deal with this more explanatory issue and to illuminate key features.

|  |  |
| --- | --- |
| **Activity 6.1** |  |
| Examine the following social policy problem and, using Table 6.1, suggest which research strategy or strategies could be used to address it:  Government statistics reveal a disturbing rise in inner-city drug addition and substance abuse over the past five years. Increased policing and greater legal penalties have had no effect. Drug rehabilitation experts have recommended the provision of ‘safe housing’ for persistent offenders where their drug intake can be monitored, regulated and reduced over time. Apart from the threat of political ‘backlash’, the government wants to understand more about the effec- tiveness of such a programme before deciding whether to support it. | |

**TABLE 6.1** SELECTION CRITERIA FOR DIFFERENT RESEARCH STRATEGIES

**Form of research Requires control over Focuses on**

**Strategy question behavioural events? contemporary events?**

Experiment How, why Yes Yes

Survey Who, what, where, how No Yes many, how much

Unobtrusive Who, what, where, how No Yes/No measures many, how much

Case study How, why No Yes

*Source:* Adapted from COSMOS Corporation, in Yin, 1994

You probably decided that the safe houses approach could be used as a case study to explore *how* the drug intake methods affected addiction. The case study approach is not dissimilar to the use of unobtrusive measures such as documents, archives and the use of historical evidence – in each case no attempt is made to manipulate behaviours. But while unobtrusive measures can only rely on the use of existing documentation (historical or contemporary), case studies tend to focus on collecting up-to-date information. For this reason, data collection may involve the use of not only contemporary documentation, but also direct observation and systematic interviewing.

Nevertheless, as Yin (1994) makes clear, the case study approach has not been universally accepted by researchers as reliable, objective and legitimate. One problem is that it is often difficult (indeed, dangerous) to generalize from a specific case. But, in defence of case studies, Yin points out that most scientific inquiries have to be replicated by multiple examples of the experiment, and case studies too can be based upon multiple cases of the same issue or phenomenon. Gummesson (2000) supports this view, asserting that, even in medicine, doctors’ skills are often built up from a knowledge of many individual cases.

Another criticism of case studies is the amount of time they take and the volume of documentation they generate. ButYin argues that this is to confuse case studies with one particular type, the use of ethnographic or participant-observation studies where the amount of data collected can be vast. The one argument that Yin (1994) does concede is that conducting case studies successfully is an uncommon skill.

**THE CASE STUDY DESIGN PROCESS**

Before embarking on the design process itself,Yin (1994) recommends that the investigator is thoroughly prepared for the case study process.This includes being able to formulate and ask good research questions and to interpret the answers. This means ‘switching off ’ his or her own interpretative ‘filters’ and actually not- ing what is being said, or done (recall the discussion of phenomenology in Chapter 1). The investigator must be able to respond quickly to the flow of answers and to pose new questions or issues. Having a firm grasp of the theoreti- cal principles involved will obviously help because issues will be thrown into

Prior theory used in data collection and analysis



Exploratory

(inductive) approach

Confirmatory (deductive)

approach



Number of cases

**FIGURE 6.1** A COMPARISON OF TWO CASE STUDY POSITIONS: INDUCTIVE AND DEDUCTIVE (ADAPTED FROM PERRY, 1998)

sharp relief if the data contradict what was expected. This, again, reinforces the importance of the deductive approach. But the case study approach can also gen- erate data that help towards the development of theory – and is, hence, inductive. So which is most important?

***Inductive or deductive?***

A possible relationship between induction and deduction in case study research is illustrated by Perry (1998). In the left side of Figure 6.1, the first (extreme left hand) case study is purely inductive or exploratory, starting from no theoretical position (pure grounded theory – see Chapter 10). Data collection and analysis in the next case study are informed by some of the concepts found in the first study. But it is difficult to draw inferences through this approach because, as new find- ings are generated with each study, the focus of subsequent studies (and the kinds of questions that are asked) begins to shift. Hence, data from each study cannot be compared, because we would not be comparing like with like.

This problem is overcome by the more deductive, or at least confirmatory, approach on the right side of Figure 6.1. Here, the first case study could consti- tute a pilot case, which establishes the theoretical boundaries and then the data gathering protocol and tools for all the remaining studies. The initial theory is then confirmed or rejected by cross-case data analysis across all the main case studies.

This approach is confirmed by Yin (1994), who also argues that, after adopt- ing a particularly theoretical position, the research proceeds through a series of

**Define and Design Prepare, Collect and Analyse Analyse and**

**Conclude**

Select

cases

Modify

theory

Design data

collection tools and protocol

Develop theory

Write individual case study report

Write individual case study report

Draw cross- case conclusions

Write individual case study report

Conduct remaining case studies

Conduct second case study

Conduct first case study

Write cross- case report

Develop policy implications

**FIGURE 6.2** MULTIPLE CASE STUDY METHOD (ADAPTED FROM YIN, 1994)

case studies, allowing for cross-case comparisons to be taken. In essence, Yin suggests that the research should progress through a series of stages (see Figure 6.2), each of which is described in more detail in the next section.

***A case study process***

**Develop a theoretical stance**

A provisional hypothesis or set of questions is developed – provisional in the sense that they are open to further improvement or modification during the process of the study. Hypotheses or questions should be linked, where possible, with previ- ous research.This is also an opportunity to identify rival hypotheses and theories, both of which will help in the analysis of the results.

Let us take the example of a case study that seeks to evaluate the software development process for the building of an organization’s intranet Web portal.The hypothesis is that: for Web portal design, the traditional principles of the software development ‘life cycle’ are inappropriate. Then, using what Yin (1993) calls *analytical generalization*, we are able to compare and contrast the results of the case study with an accepted set of principles or theory. If two or more cases are shown to support the theory, then it becomes possible to make a claim that the theory has been replicated. Yin warns, however, that while analytical generalization is appropriate, statistical generalization is certainly not. It should not be assumed, for

example, that the results of a case study can be generalized to a larger population as one would do in an experimental or quasi-experimental design.

**Select cases**

Cases are selected and the main and subordinate units of analysis provisionally defined. For example, the organization itself might be the main unit of analysis, with departments or geographically dispersed sites the subordinate units. Note that the main and subordinate units of analysis may require different research tools.

**Design and pilot research tools, protocols and field procedures**

In the design process, care should be taken to ensure that all tools match the orig- inal hypothesis and research objectives. Protocols involve the design of a struc- tured set of processes or procedures, often linked to how the research tool is to be administered. For example, a protocol might be used to specify to an interviewer exactly how the interview is to be conducted, and how the interview schedule is to be used.

One of the key design issues in the case study method is the definition of the *unit of analysis,* and then ensuring that this unit of analysis fits with the research objectives of the study.Taking our Web portal development example, it is this *process* that is the unit of analysis and not the look or functionality of the por- tal itself (although this could be the subject of a different case study). The con- ceptual framework here is the software development process, including design, prototyping, development, testing and implementation. The study could also explore the group dynamics (another process) between the Web development team involved in building the portal, to understand how their efforts can be improved in future Web projects.

**Conduct case study (or studies)**

The data are collected, analysed and synthesized into individual case study reports. This is unlikely to occur in a sequential process. So there may be circumstances when analysis raises new questions for which new units of analysis may have to be formulated and additional data collected. Each of the case studies is regarded as a study in its own right, and the findings of each needs to produce *converging evidence*, so that the data from one case replicate the data from another. Think in terms of the police detective at the scene of a crime looking for multiple pieces of evidence that, together, add up to a clear ‘picture’ or solution.

However, while much of the data may serve to ‘prove’ or illustrate an issue or phenomenon, negative instances may also make a vital contribution to the analysis. Kidder (1981), for example, shows how an initial hypothesis can be con- tinually revised (on the basis of negative or contradictory data) until it can be val- idated by the data. Case studies can also sometimes be illuminated by key events. The routine of office or factory life, for example, may serve to obscure phenomena

or trends whereas a key event such as a staff ‘away day’ or a new computer system going ‘live’ may throw up revealing tensions and social dynamics.

In terms of data collection, the case study method requires the use of *mul- tiple sources of evidence*.This might include the use of structured, semi-structured or open interviews, field observations or document analysis.As we saw in Chapter 3, multiple sources of data also help address the issue of construct validity because the multiple sources of evidence should provide multiple measures of the same construct. The next Case Study provides an example of how rich data can be collected from multiple sources in order to develop a case study.

|  |
| --- |
| **Case Study 6.1 The taxi-dance hall**  In 1932, a group of researchers from Chicago carried out an ethnographic study of an institution called the taxi-dance hall. These halls had developed in the nineteenth century during a period of mass immigration to the USA and were clubs where men could pay for dances with young women. The city social ser- vices department were concerned that these dance halls were dens of vice and prostitution.  Four research assistants were employed to collect data by attending dances as participant observers and later to interview taxi-dancers, their clients and the busi- nessmen who ran the halls. The study is vague on precise methodological details, such as the length of the project or ethical or practical issues. But the study is rich in description, as the following passage shows:  *Before long the patrons and taxi-dancers began to arrive. Some patrons come in automo- biles, though many more alight from street cars. Still others seem to come from the imme- diate neighbourhood. For the most part they are alone, though occasionally groups of two or three appear. The patrons are a motley crowd. Some are uncouth, noisy youths, bus- ied chiefly with their cigarettes. Others are sleekly groomed and suave young men, who come alone and remain aloof. Others are middle-aged men whose stooped shoulders and shambling gait speak eloquently of a life of manual toil. Sometimes they speak English fluently. More often their broken English reveals them as European immigrants, on the way towards being Americanized. Still others are dapperly little Filipinos who come together, sometimes even in squads of six or eight, and slip quietly into the entrance. Altogether the patrons make up a polyglot aggregation from many corners of the world.* (Cressey, 1932: 4–5)  Analysis of the data reveals that many of the girls see dancing as a glamorous and well-paid alternative to an early marriage, or to factory or office work. The backgrounds and motivation of the clients are revealed, and show them as isolated and lonely people.There is discussion of the language used by the dancers and their descriptions of clients as ‘suckers’, ‘fruit’ and ‘fish’. As Travers points out, the result of the study is ‘a revealing and intimate portrait of this social world, built up through a careful study of different group and individual perspectives’ (2001: 28).  *Source*: Cressey, 1932, in Travers, 2001 |

|  |  |
| --- | --- |
| **Activity 6.2** |  |
| Look back at Case Study 6.1.   1. Identify the implicit working hypothesis of the study. 2. What are the multiple sources of evidence? 3. On the basis of the evidence presented in the study, should the original hypothesis be accepted or rejected?   *Suggested answers are provided at the end of the chapter.* | |

**Create a case study database (optional)**

This process is to ensure that information is collected systematically and that it is logically ordered in the database as well as being easily accessible. One factor that distinguishes the case study approach from other research methods is that the case study data and the case study report are often one and the same. But all case stud- ies should contain a presentable database so that other researchers and interested parties can review the data as well as final written reports. Allowing other researchers to evaluate the data or to replicate it increases the *reliability* of the case study. Case study databases can take a variety of formats, including the use of:

* *Case study notes* resulting from observations, interviews or document analysis, and may take the form of computer files (word processed or an actual data- base), diary entries or index cards.Whatever form they take, it is essential that they are put into categories and that these can be accessed quickly and easily. Obviously, computer-based files are more efficient in terms of both storage space and search facilities.
* *Case study documents*, which need to be carefully stored and an annotated bib- liography produced for ease of later analysis and retrieval.
* *Tabular materials* of quantitative data.

**Draw cross-case conclusions**

This can include a broad range of analytical techniques involving both quantita- tive and qualitative approaches. A result of data analysis may also require that fur- ther data need to be collected. If the results are unexpected (in the light of current theory) the researcher may have to return to the theory and suggest modifica- tions. The analysis may also have implications for policy making and organiza- tional practice.

**Write the case study report**

One of the problems with case studies is that they tend to produce large volumes of data, held in a case study database.The report writing stage, then, can sometimes

**TABLE 6.2** THE PROCESS OF CASE STUDY CONSTRUCTION

**Stage Process**

*Source*: Adapted from Patton, 1990



*Assemble raw case data.*

Consists of all the information collected about an organization, person(s) or event

Step 2 (optional) *Construct case record*.

Organize, classify and edit raw data to condense it

Step 1

Step 3 *Write case study narrative*.

Chain of evidence

appear quite daunting. Patton (1990) suggests that a useful intermediary step between this database and the writing of the case study report (which he terms a narrative) is the construction of a case record (see Table 6.2). Each record contains an edited and more condensed version of each case.

The case study report is conceptually linked back to the case study records and raw case data through a ‘chain of evidence’, including tables, reproduced doc- uments, vignettes etc. These allow the reader (such as another researcher, or the case study’s sponsor) to question and even re-interpret the data if necessary. The evidence in the database should also be consistent with the questions and proce- dures cited in the case study protocol. Allowing a researcher to successfully check the chain of evidence increases the *reliability* of the case study if more than one researcher uses the data to come to similar conclusions (inter-judge reliability).

The task of report writing is much easier, and the results are likely to be more coherent, if the previous stages have been observed carefully. For example, if a case study protocol has been drawn up and implemented, and if individual case study reports have been written up and conclusions drawn (See Composing case study reports, p. 143, for details of report types and structures.)

**TYPES OF CASE STUDY DESIGN**

Whatever the precise case study design chosen, it is essential that the case study takes the reader into the case situation. This means that descriptions should be holistic and comprehensive and should include ‘myriad dimensions, factors, vari- ables, and categories woven together into an idiographic framework’ (Patton, 1990: 387).The design process for case studies involves deciding whether the unit of analysis for the study will be an individual case (for example, a person or orga- nization) or multiple cases. Yin (1994) proposes four main types of case study design, as represented in Figure 6.3, each of which need to be selected on the basis of particular sets of conditions. This shows that case studies can be based upon single or multiple case designs and on single or multiple units of analysis.

***Type 1: single case study, holistic***

In this type of study, only a single case is examined, and at a holistic level, for example, an entire programme, not individual elements within it.The single case

**Single case designs Multiple case designs**

|  |  |
| --- | --- |
| **Type 1**  Single/holistic | **Type 3**  Multiple/holistic |
| **Type 2**  Single/embedded | **Type 4**  Multiple/embedded |

**Holistic (single unit of analysis)**

**Embedded (multiple units of analysis)**

**FIGURE 6.3** MAIN TYPES OF CASE STUDY DESIGN

study should be chosen when it can play a significant role in testing a hypothesis or theory. Another reason is when the case study represents a unique or extreme case, or a revelatory case, where, for example, a researcher is allowed into a previ- ously sensitive or secretive organization to carry out research.There may be other times when a single case study is merely the precursor to further studies and may perhaps be a pilot for a later multiple study.

***Type 2: Single case, embedded***

Within a single case study, there may be a number of different units of analysis. For example, let us take a case study looking at the implementation of a mentor- ing system. This is a single case (the mentoring system) but the multiple units of analysis here might comprise:

* The official mentoring processes as laid down by the company’s mentoring handbook.
* The perspectives of mentors.
* The perspectives of mentees.
* Tangible evidence that the mentoring system improves company collaboration, networking and morale.

*Comparing*

CASE

Theory or set of questions/ propositions

Collection

Interpretation

CASE

Collection

Accept/ reject theory or propositions

Interpretation

*Sampling*

*Sampling*

*Comparing*

CASE

Collection

Interpretation

*Comparing*

**FIGURE 6.4** REPLICATION THROUGH USE OF MULTIPLE CASES (ADAPTED FROM FLICK, 1998)

***Type 3: Multiple case, holistic***

Where the multiple case study approach is needed (say, to improve the reliability or generalizability of the study) but it is not possible to identify multiple units of analysis, then a more holistic approach can be taken. Let us use the example of a region comprising several hospitals that is attempting to improve its communica- tion processes through the implementation of a specially designed training pro- gramme. A researcher might use this communications training programme as a single, holistic unit of analysis, but look at the operation of the programme in all of the hospitals (multiple cases) and over a number of months.The aim here is not to increase the size of the hospital ‘sample’, but to *replicate* the findings of one case across a number of cases. In this sense, the approach is not very dissimilar to that of experimentation, where an attempt is made to replicate the findings of one experiment over a number of instances, to lend compelling support for an initial set of propositions. Figure 6.4 illustrates this.

Yin (1994), however, warns that a very serious danger of holistic designs is

that the nature of the study may begin to shift under the very nose of the researcher. Hence, the researcher may have begun the investigation on the basis of one set of questions, but the evidence from the case study may begin to address a very different set of questions (recall the left-hand side of Figure 6.1).This is such a threat to the validity of the study that Yin (1994) argues that the only recourse is to begin the study again with a new research design.

***Type 4: Multiple case, embedded***

The problems faced by holistic case studies can be reduced if multiple units of analysis are used which allow for more sensitivity and for any slippage between

research questions and the direction of the study to be identified at a much earlier stage. But one of the dangers of embedded designs is that the sub-units of analysis may become the focus of the study itself, diverting attention away from the larger elements of analysis. For example, with our communications case study, the researcher may examine how the training programme has improved commu- nications between certain groups of nurses and doctors. But if the study remains at this level, it may fail to use this data to explore the wider issue of organizational communication (say, the role of senior management directives) where more significant problems may lurk.

Nevertheless, one of the advantages of multiple case studies is replication (see Figure 6.4, above). But how many case studies is sufficient for multiple case design? The answer, as you would probably expect, is not simple. If external valid- ity (the generalizability of the results – see Chapter 3) is important, or if it is feared that each study may produce quite divergent results, then it is safest to maximize the number of studies. The key here will not to be to aim for measures of statis- tical significance but for at least some semblance of reliability and credibility.

**DATA COLLECTION SOURCES**

Yin (1994) suggests that there are broadly six main sources of case study data, each of which have their own strengths and weaknesses, which are summarized in Table 6.3. It should be noted that these sources are not mutually exclusive, with a good case study tending to use multiple sources of evidence. Note that each of these data collection sources is discussed in detail in later chapters.

|  |  |
| --- | --- |
| **Activity 6.3** |  |
| A new Managing Director takes over at Zenco, a manufacturer of engine parts for the automobile industry. His first decision, in a major cost-cutting exercise, is to scrap the headquarters’ Reception desk and make the staff who work in it redundant. In its place, visitors have to complete their own security passes and use the internal company telephone directory to inform their client that they have arrived. After six months, you are asked by the MD to carry out a small case study on how the new system is working.   1. What kind of research questions would you seek to address? 2. Which of the following data gathering methods would you use: survey, observation, interview, archival records? Would you favour just one of these methods or use a combination?   *Suggested answers are provided at the end of the chapter.* | |

**TABLE 6.3** SIX SOURCES OF EVIDENCE AND THEIR STRENGTHS AND WEAKNESSES

|  |  |  |
| --- | --- | --- |
| **Source of evidence** | **Strengths** | **Weaknesses** |
| Documentation | Stable – can be reviewed | Access – problems of |
| (see Chapter 10) | repeatedly  Unobtrusive – not created as a result of the case study  Exact – contains precise details of names, positions, events Broad coverage – long span of time, events and settings | confidentiality in many  organizations  Reporting bias – reflects (unknown) bias of document author |
| Archival records | (Same as above for | (Same as above for |
| (see Chapter 10) | documentation)  Precise and quantitative | documentation) |
| Interviews | Targeted – focus directly on | Danger of bias due to poorly |
| (see Chapter 8) | case study topic  Insightful – provide original and illuminating data | constructed questions  Response bias  Inaccuracies due to poor recall Reflexivity – interviewee gives what interviewer wants to hear |
| Direct observation | Reality – covers events in real | Time-consuming and costly |
| (see Chapter 9) | time  Contextual – covers context of events | Narrow focus – unless broad  coverage  Reflexivity – event may proceed differently because it is being observed |
| Participant | (Same as for direct observation) | (Same as for direct observation) |
| observation | Insightful into interpersonal | Bias because investigator |
| (see Chapter 9) | behaviour and motives | unwittingly manipulates events |
| Physical artefacts | Insightful into cultural features | Selectivity – may be based |
| (see Chapter 10) | Insightful into technical  operations | upon idiosyncratic choices  Availability |

*Source*: Adapted from Yin, 1994

**QUALITY IN CASE STUDIES: VALIDITY AND RELIABILITY**

As we have seen in other research methods, and already in this chapter, the issues of validity and reliability are never far from the surface.They are probably of parti- cular importance for the case study method because of the reliance on data that is generated from either limited or particular samples or situations.

***Construct validity***

Yin (1994) points out that construct validity is particularly problematic for case studies, because of the difficulty of defining the constructs being investigated. For

example, let us say that a researcher is asked to investigate the extent to which team work between different members of a project group has improved over a 12-month period.The problem here is how the concept of team work is defined, leaving the danger that the researcher will base this on his or her personal impres- sions.This can only be avoided if the researcher:

* Operationally defines the concept ‘team work’ at the outset.
* Selects appropriate measurement instruments and/or data sources for the defined concept.
* Uses multiple sources of data in a way that encourages divergent lines of inquiry.
* Establishes of a chain of evidence during the data collection process.
* Evaluates the draft case study report through feedback from key informants.

***Internal validity***

This issue only arises with causal (as opposed to descriptive) case studies where the researcher is attempting to show whether event *x* led to outcome *y*.As we saw in Chapter 3, in research designs that attempt to demonstrate causality, the dan- gerous impact of extraneous variables always threatens.Taking our previous exam- ple of team work within the project group, we may be trying to ‘prove’ that improvements have occurred as a result of an intensive training programme in team building initiated by senior management.The challenge will be to find sig- nificant associations between the training programme and better team work and that the recent introduction of ‘flat’ management structures (in this case, an extra- neous variable) was not the main source of improvement.

Another threat to internal validity comes from the problem of making inferences from the data, when it is simply not possible to actually observe the event. Hence, the researcher will ‘infer’ that something has occurred based upon case study interview data or documentary evidence. But is it logical and safe to make this inference? Yin (1994) suggests a number of ways of increasing the con- fidence of making the inference, namely: *pattern matching*, *explanation building* and *time-series analysis* (see pp. 139–42).

***External validity***

This addresses one of the most problematic issues faced by the case study approach – whether its findings can be generalized beyond the study itself. Of course, not all would agree that generalizability should be a goal of research. Lincoln and Guba (2000) assert that generalizations inevitably alter over time, so that they become of only historical interest. There are no absolutes and all ‘truth’ is relative. But Schofield (2000) argues that generalizing is also becoming important

in qualitative research. This is partly because the approach is becoming used in high profile studies often linked to evaluation. Funding agencies for large-scale projects also want to see that findings have a wider applicability than to just the project itself.

Taking our example of team work in the project group, to what extent are we able to say that if the training programme did, in fact, help towards better team work, the programme would have a similar impact in other project groups within the organization, or, indeed, in quite different organizations? Gomm et al. (2000) point out that a significant amount of case study research does, indeed, try to make claims for studies that go beyond the original case.They also claim that case study research should be directed towards drawing general conclusions. But how, in practice, should this be done?

The problem faced is that the data collected in the case study may not be representative of the population as a whole (or at least representative of those fea- tures that are the focus of the research). Nevertheless, Gomm et al. (2000) advise that researchers can improve the empirical generalizability of a case study by:

* Providing evidence about the ‘fit’ of key characteristics between the sample and the population; if information about the population is not available, a warning should be issued about the risks of generalizing from the particular case study.
* Using a systematic selection of cases for study, that is, making efforts to ensure, if possible, that cases are typical of the population. Too often cases are chosen on a convenience basis only.

Yin (1994) also defends case studies by pointing out that safer grounds for mak- ing generalizations can be established if a study is replicated three or four times in different circumstances.

Before accepting this, however, it is worth noting Lieberson’s (2000) note of caution. Referring to what he calls ‘small-*N*s’ (a small number of cases), he warns that it is a bad basis from which to generalize.This is because causal propo- sitions are either *deterministic* or *probabilistic*. In the case of determinism, it is argued that ‘If *x*, then *y*’, that is, the presence of a given factor will lead to a specified out- come. Probabilistic perspectives are more modest, claiming that ‘the presence of *x* increases the likelihood of *y* occurring or its frequency’.The problem with small- *N* studies is that probabilistic measurement is ruled out because of the small size of the sample – which leaves us with deterministic measurement.

Lieberson uses the example of drink–driving and accidents. Cases can be shown where drunken drivers are involved in accidents, generating a deterministic relationship between the dependent variable (accidents) and the independent vari- able (alcohol consumption). But there are also cases where sober drivers have acci- dents and drunk drivers do not. Small-*N* studies cannot deal with interaction effects between variables (for example, the interaction between alcohol consumption and driving speed, or running through a red light), because they arbitrarily assume that such interactions do not operate. According to Lieberson, exceptionally rigorous

practices are required to avoid these methodological pitfalls. If a small number of cases is selected, then it makes a great deal of difference whether the outcomes are the same in each case, or not.A defensible solution for generalization occurs where:

* One variable is constant across all cases – so, the same independent variable,

*x*, leads to the same dependent variable, *y,* over a range of cases.

* The dependent variable is different across the cases, and all but one indepen- dent variable is constant – so pointing to that independent variable as the cause of the changes.

***Reliability***

Conditions for reliability are met if the findings and conclusions of one researcher can be replicated by another researcher doing the same case study. Bryman (1988) supports this approach, arguing that case study generalization is made more feasi- ble by team research where a group of researchers investigate a number of cases. As we have seen, this can only be achieved if researchers conscientiously docu- ment procedures through what Yin (1994) calls *case study protocols* and *case study databases*. As discussed earlier, a protocol is a plan of data collection instruments and also the procedures for using these instruments (which subsequent researchers can follow).The production of a protocol forces the investigator to think not only about how the final case study report might be completed, but also its intended audience. Yin (1994) recommends that a protocol should contain the following sections:

* An overview of the case study project, including objectives and theoretical issues.
* Field procedures, including access to the case study ‘sites’ and people; general sources of information; back up procedures including eliciting help, if needed, from colleagues; timescales; contingency plans – for example, if interviewees decide not to cooperate.
* Case study questions, table templates for collecting data and the potential sources of information for answering each question.
* A structure and guide to the final report.

**ANALYSING THE EVIDENCE**

The case study approach can be one of the most productive in terms of collect- ing data, but here the problems can often begin. In contrast to other methods, such as experimental design, there is less experience and fewer developed strate- gies for analysing case study data. Nevertheless, there are some general approaches that can be used with effect. We will look, first of all, at some general strategies, and then at some specific analytical methods.

***General strategies***

There are, essentially, two ways in which the case study evidence can by analysed. The first is to analyse the data on the basis of the original theoretical propositions and the research objectives that flowed from them. The other is to develop a descriptive framework once the case study has been completed. Yin (1994) recommends that the former is preferable.

**Theoretical propositions**

One of the purposes of theory is to assist the researcher in making choices between what is worth investigating and what should wisely be ignored. Hence, the objectives and questions of the study are very likely to have been guided by its theoretical underpinning. At the analysis stage itself, data can be compared and contrasted with what the theoretical models have predicted, and suppositions made about the extent to which the original propositions can be supported or rejected.

**Descriptive framework**

The approach, as its name implies, is more descriptive than analytical, and can be used when perhaps a case study is chosen for a subject or issue for which an underlying theoretical proposition is not obvious.The descriptive framework can operate perhaps to identify the types of cases for which further, more quantitative analysis, should be applied.

***Analytical methods***

Since one of the objectives of data analysis is to find relationships and contrasts between variables, some techniques are presented here that facilitate this process.

**Pattern matching**

The logic behind pattern matching is that the patterns to emerge from the data, match (or perhaps fail to match) those that were expected. Figure 6.5 illustrates two possible scenarios.With *non-equivalent dependent variables as a pattern*, a research study may have a number of dependent variables or outcomes that emerge from it. If, before the research is carried out, a number of predictions about the expected dependent variables are made, and are subsequently found, then this sup- ports the internal validity of the study. Hence, in Figure 6.5 dependent variables A, B and C are predicted, resulting from changes in one or more independent variable.

Another type of pattern matching approach is the use of *rival explanations as patterns*. Here, several cases may be known to have a certain outcome, but there may be uncertainty as to the cause, that is, which independent variable is the determining one. Each of the different theoretical positions must be mutually

**Non-equivalent dependent variables as a pattern**

***Predicted Actual***

Independent variable Independent variable

Dependent variable A Dependent variable B Dependent variable C

Dependent variable A Dependent variable B Dependent variable C

**Rival explanations as patterns**

Independent variable A Independent variable B Independent variable C

Dependent variable

*Rival theoretical positions*

**FIGURE 6.5** PATTERN MATCHING OF CASE STUDY DATA

exclusive, so finding the presence of one position excludes the presence of any other.

Take the example of a charitable organization that wants to understand the factors that increase its donation receipts (dependent variable). Case study research is initiated that explores several cases of positive fluctuations in its income stream. It finds two cases when extensive media coverage of a national overseas disaster leads to a 40 per cent short-term rise in donations. A rival theoretical position, that media advertising produces a higher income stream, is found to be inconclusive – on some occasions income rises modestly, on other occasions hardly at all. Hence, the theoretical position, that donations are a product of media coverage of disasters, is accepted. Case Study 6.2 provides an illustration of how pattern matching can be used.

|  |
| --- |
| **Case Study 6.2 A case study of team working**  A year ago, the CopyMatch printing company faced mounting financial losses and decided that it needed to restructure its organization. Its sales representatives earned most of their income through incentive bonuses and, therefore, tried to maximize both their number of clients and sales per client. But often this meant that they took very specialist and small-scale orders that were time consuming to set up, and therefore unproductive and costly to execute. This, of course, was of little concern to the sales ‘reps’ since they were maximizing their own income.  *(Continued)* |

|  |
| --- |
| As part of the restructuring, the workforce was divided into five teams, each of which contained different combinations of sales representatives, production man- agers, production supervisors and print workers.Through these cooperative teams it was intended that sales representatives would be influenced and informed by those more knowledgeable of the production cycle. The company wanted to monitor the impact of the reorganization and set up a research project, based upon this single case study. The dependent variables (outcomes) of the reorganization were predicted as:   * More orders will be fulfilled to specified times. * Estimates of customer satisfaction will rise and there will be fewer customer complaints. * Larger-scale print runs will be undertaken. * Levels of employee satisfaction will rise.   The research study measured the impact of each type of team (non-equivalent independent variables) to find whether the new structure was more effective than the old one, and which combination of workers had the greatest effect on outcomes. |

|  |  |
| --- | --- |
| **Activity 6.4** |  |
| For Case Study 6.2:   1. Suggest an appropriate case study design. For example, what would you choose as the source of measurement? 2. What are the independent variables? Would you treat the project as one case, or each of the teams as sub-cases?   *Suggested answers are provided at the end of the chapter.* | |

We saw in Case Study 6.2 that all the predicted independent variables were present, lending considerable weight to the validity of the assertion that the use of production teams increases efficiency, productivity and customer and employee satisfaction. If, however, even just one of these outcomes was not found, the initial proposition could not be supported. Conversely, if another company also used this type of team organization and came up with equivalent results, then this replication of the findings would lend further weight to the proposition.

**Explanation building**

This strategy is a special kind of pattern matching, but is less structured. Let us say that we want to find an explanation for a problem – to reveal its underlying causes. If these are not to be either subjective or anecdotal, it helps if these causes

are located within some sort of theoretical proposition.We would first of all make an initial statement or proposition based upon this theoretical position. Next, we would compare the findings of an initial case study against this proposition, and amend the proposition if necessary. Another case study is taken and the proposi- tion amended, etc. The process is repeated as many times as is considered neces- sary. At all times it is essential that rival explanations are also considered and solid grounds sought for accepting or rejecting them.

**Time-series analysis**

In time-series analysis, data on dependent or independent variables are traced over time so that predicted patterns can be compared with the actual patterns that emerge and inferences drawn. What is important here, is that valid indicators are selected that match the objectives of the study. Case Study 6.3 provides an illustration.

|  |
| --- |
| **Case Study 6.3 Time-series analysis**  A large-scale retail park is built on a green-field site on the periphery of a medium-size city. The impact of such a development is measured over time, so a time-series analysis is appropriate here. As usual, we start with a theoretical posi- tion or proposition, in this case, that the retail park will impact on the nearby town and locality in a number of ways. First, it will increase the pace of mid-town urban degeneration, in the first place by the closure of various shops and stores, followed, in time, by changing patterns of urban residence – higher income families moving out towards the suburbs. Secondly, increased urban degeneration will increase crime patterns in this locality. Thirdly, traffic flows will change with new conges- tion ‘blackspots’ emerging in feeder roads to the retail park. Data are collected on an annual basis over five years through observation, local government records and crime statistics. |

|  |  |
| --- | --- |
| **Activity 6.5** |  |
| In Case Study 6.3 identify the independent and dependent variables. To what extent can you be sure that changes in the dependent variable result from the impact of the independent variable and not from other factors?  *Suggested answers are provided at the end of the chapter.* | |

Case Study 6.3 is an example of an *interrupted time-series* because the data on, say, patterns of retail spending in the inner city are known before the retail park is built and can be compared with those after its completion. Using a *com- plex time-series*, we could postulate that a negative trend in a set of data points will

be followed by a rise. Using our retail example, we could predict that after a period of several years, the cheap rents and land prices in the inner city (plus state grants and programmes) will attract new entrepreneurs, small businesses and service industries, resulting in urban regeneration.

Another form of time-series analysis is the use of *chronologies*, tracing events over time. The aim here is to compare the chronology of predicted events with what actually occurs. A theoretical proposition may predict that one set of events should be followed by another and that the reverse sequence is impossible; simi- larly, it may predict that one event should be followed by another after a pre- scribed period of time. Thus, chronologies not only allow for a description of events, but also for the analysis of causes.

**Programme logic models**

This combines both pattern matching and time-series approaches. Here, it is pos- tulated that an initial event (independent variable) will produce an intermediate result which, in turn, will produce a final outcome (dependent variable). So, for example, improvements in health and safety procedures in a factory might, indeed, produce better safety standards and lower accident rates. The final result of this might be less disruption to production (through sickness and absence) and higher levels of worker satisfaction, both leading to higher productivity levels. Pattern matching would predict a number of dependent variables (worker satisfaction and higher productivity) as outcomes whilst the time-series approach would measure these outputs over time.

**COMPOSING CASE STUDY REPORTS**

We will deal with the skills in writing business research reports in general in Chapter 13, but here we will focus on some of the skills and issues that are specific to the case study approach. Given that, as we have seen, the planning and execution of case studies is one of the least systemized of all the research approaches, this, in principle, leaves the case study report also less precisely struc- tured. Nevertheless, following some of the ideas below will help.

***Know your audience***

Typical recipients of case study reports may be business managers, health pro- fessionals, government planners and policy makers, community leaders and spe- cial interest groups. As with any report, it is essential that you know whom you are writing for and what it is that they are interested in and what they want to know.

Sometimes case studies can be particularly effective when read by non- specialist or non-technical readers because their descriptive basis and findings can be both illuminating and memorable. For example, consider the relative impact of

two reports on the effect of government aid programmes to developing nations. One report is based on a thorough statistical analysis and plentiful quantitative data presented in tabular form. The other report is a case study of an African village showing both the dramatic fall in the mortality rate following the installation of clean water supply but also the continuing grinding levels of under-employment and poverty.

|  |  |
| --- | --- |
| **Activity 6.6** |  |
| Which of the reports just described do you think will have the greatest impact on (a) public opinion; (b) government opinion? | |

Clearly, government opinion is more likely to be influenced by facts, statis- tics and rational analysis, while the public tend to favour more of the ‘human element’ that would emerge through the case study of the African village. Imagine the potential impact if the African village report was taken up and illustrated through a television programme.

One type of audience we have not mentioned so far are the readers and examiners of dissertations and theses. If you are conducting a case study as part of an academic programme then this type of audience will be interested, amongst other issues, with the theoretical propositions on which the study is based, and the extent to which your analysis supports claims that are consistent with the evidence.

Above all, you must ensure that you are actually writing for an audience and not for yourself. This is a particular danger if you are conducting a case study within your own particular work environment, or in a situation within which you have a strong emotional connection. Take, for example, a voluntary worker with an Aids charity conducting a case study into how a particular group of HIV- infected men and women support each other. The danger is that the final report deals with a catalogue of issues that have worried the voluntary worker for some time. But if the report is aimed at changing public perceptions and attitudes towards HIV-infected people, then it must objectively address these wider social values and interests if it is to have any chance of changing ideas.

***Types of case study report***

Case study reports are usually written, but, in principle, they can also be presented orally, or through photographs, film or video. If a case study is not subject to con- fidentiality, then it can also be placed on the Web for wider public dissemination. Indeed, if the intended audience is a public one, it would be difficult to find a better delivery medium than the Web. In general, whether presented as a traditional document, or via the Web, written communication is likely to be the most familiar medium to both writer and reader.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of case study** | **Report structure** | | | |
| Single case study | Case study description and analysis | | | |
| Multiple case study | Cross-case analysis and results | | Appendix:  Narrative Case Study 1 Narrative Case Study *n* | |
| Multiple case study: without narrative | Case study 1 | Question 1  Question 2 | | Answer Answer |
|  | Case study 2 | Question 1  Question 2 | | Answer Answer |
| Multiple case study: integrated | Cross-case issue 1 – data and analysis from all cases Cross-case issue 2 – data and analysis from all cases | | | |

**FIGURE 6.6** FOUR WRITTEN FORMS OF CASE STUDY

Figure 6.6 gives examples of four structures that can be used for the generation of written reports, broadly following typical case study design formats. For the classic single case study, the report simply consists of the description and analysis of the data. In the multiple case study, the main body of the report could begin with narrative descriptions of each of the case studies, but these can be bulky and could be confined to the appendices. In this case, the main body of the report would consist of the analysis and supporting data of the cross-cases.A more focused approach would be to present the findings in the form of a question and answer format for each of the case studies. Here, the reader is then in a position to go to those questions of particular interest for each of the cases. This can be both efficient in terms of the reader’s time and allow the reader to draw comparisons across each of the studies. The fourth example takes this a stage further using an integrated approach that takes issue by issue (using each case study to supply the underlying data and analysis).

Yin (1994) warns that the selection of one of these approaches for the final

report needs to be made during the design of the case study and not as an after- thought, and should be contained in the case study protocol.

***Written report structures***

A number of alternative report structures are possible, depending on the audience and what the researcher is trying to achieve (see Figure 6.7). If, for example, the final case study report is being written for a largely academic audience, then the linear-analytic structure would probably be acceptable, since its format would be readily recognized by academics. These structures could be used with any of the single or multiple case studies just discussed.

The *comparative* structure takes the same case study and repeats it two or more times, comparing and contrasting the results. This could be done through

**LINEAR-ANALYTIC THEORY BUILDING**

Statement of problem Literature review Methodology Findings/analysis Conclusions

**COMPARITIVE**

Case study 1: description A Case study 1: description B

**CHRONOLOGICAL**

Event A Event B Event C

Theory/model

**SUSPENSE**

Answer Background

Alternative explanations

**UNSEQUENCED (example)**

Product development

Health and safety improvement Business planning

Human resource development

**FIGURE 6.7** ALTERNATIVE WRITTEN REPORT STRUCTURES

beginning each time with different underpinning theoretical models, allowing the case to be viewed from an alternative perspective.These repetitions are typical of pattern matching approaches.

The *chronological* structure simply takes a series of events over time and sets them out in sequence. It should not be supposed, however, that this approach is purely descriptive – it can also be used both from explanatory and exploratory studies. For example, setting out a logical sequence of events may not only describe them, but provide insights into linkages and causes.

With the *theory building* structure the purpose is to build a series of chapters or sections that develop a theoretical perspective behind the case study.The theory may serve an explanatory purpose, seeking connections between cause and effect, or an exploratory one, suggesting new research questions and propositions.

The *suspense* structure is probably one of the most valuable in a business environment because it begins with the ‘answer’ or key findings of the case study. This is what managers, planners and the sponsors of research want to know. Subsequent chapters provide the background to the study and may even look at alternative perspectives on the findings.

Finally, in the *unsequenced* structure, the actual sequence of sections or chapters has no particular significance for the report. Findings can be presented in any order, provided that they are compatible. So, in Figure 6.7, the unsequenced example illustrates a case study of a company where each section can be presented independently in its own right, with no requirement for sequencing the sections in a particular order.

The final Case Study in this chapter brings together many of the principles of case study design that we have discussed. These include the role of theoretical propo- sitions, the design of clear research methodologies and data gathering tools and the use of multiple sources of evidence.

|  |
| --- |
| **Case Study 6.4 Japanese transplant companies in the UK**  A major theoretical theme of management–worker relations in Japanese (transplant) firms based in the UK, is that of strong management control (hegemony) based upon sophisticated recruitment policies, surveillance and performance monitoring. This is facilitated by a compliant local environment with national and local state bureaucracies, development corporations and trades unions eager to offer coopera- tive working arrangements in exchange for inward foreign (Japanese) investment.  A case study was carried out (Elger and Smith, 1998) working on the hypothe- ses (based upon previous research) that:   * Despite the use of ‘greenfield’ sites and inexperienced labour, recruitment and retention of labour still poses problems for Japanese transplant companies. * In response to these circumstances, management policies are not neatly pre- determined but involve debate, conflict and often piecemeal innovation. * Management policies among Japanese transplants are influenced not only by local and national environments, but by patterns of ownership and company traditions. * These sources of differentiation help to explain the variations in the ways in   which managers respond to common problems within a shared labour market.  A research methodology for the case study was established with the selection of four Japanese greenfield transplant companies, all based in Telford, a ‘new town’ in the West Midlands of the UK.Ten per cent of managers in these companies were interviewed, plus a number of other ‘key informants’ in the locality. Documentary evidence and observational data were gathered on both corporate policies and the local labour market. The impact of ‘location’ as an independent variable was con- trolled for by holding it constant – that is, by using a set of case study companies from the same location. So, by focusing on four companies operating in the same labour market, it became feasible to identify key features of this environment that impact on their labour relations. It also became possible to explore the impact of individual company policies and strategies on the management of labour relations.  Data on the production and personnel policies in each of the four case study workplaces were gathered using a template (see Table 6.4).  The authors acknowledge that the data need to be treated with some caution:  *Of necessity, this table captures only a snapshot of what are evolving patterns of employ- ment practices, and the uniform terminology glosses over important differences in the implementation and meaning of the various features in the different workplaces. (Elger and Smith, 1998: 193)*  *(Continued)* |

|  |
| --- |
| **TABLE 6.4** PERSONNEL AND PRODUCTION PRACTICES IN THE CASE STUDY PLANTS  **Company name**  **Practice Copy Co. PCB Co. Assembly Co. Car-part Co.**  Team briefing   P  Performance appraisal  P X  Formal consultation X  X  Use of temporary workers   X  Performance-related pay   X  Systematic hiring policy X X X P Operator responsible for quality      Key:   practice exists; P  partial application; X  practice does not exist.  But the evidence (from the table and from the interviews) shows that in all four transplant companies, managers are implementing procedures for quality manage- ment. But the form taken by quality and just-in-time measures varies significantly between the factories. Thus, the case study highlights the danger of treating specific transplant workplaces as merely exemplars of generalized Japanese ways of working. There seemed to be no uniform or systematic set of personnel policies designed to shape and induct new recruits. Rather, employee policies seemed to emerge in a much more ad hoc way, in response to emerging problems and pres- sures, often based around the problems of recruitment and retention of young labour. The case study data reveal that transplant operations are embedded within the influences of the local as well as the national economy and are influenced by the distinctive nature of local labour markets, patterns of trades unionism and employer organization and the politics of local state and development agencies.  *Source*: Adapted from Elger and Smith, 1998 |

The Case Study reveals a number of typical issues in case study design.The following Activity asks you to identify what they are.

|  |  |
| --- | --- |
| **Activity 6.7** |  |
| In Case Study 6.4, identify the following:   1. The theoretical underpinning of the case study. 2. The number and type of data collection sources. 3. Protocols used for data collection. 4. The analytical method: pattern matching, explanation building or time-series. 5. The extent to which the original hypotheses are supported or refuted.   *Suggested answers are provided at the end of the chapter.* | |

|  |
| --- |
| **SUMMARY**   * Case studies are used for a variety of subjects, including organizational perfor- mance, evaluating relationships between individuals, teams or departments and project implementation. * Case studies are often deductive in character, beginning from a theoretical premise or stance. * They should be used when there is no opportunity to control or manipulate vari- ables, but when there is an interest in explanations and analysis of situations or events. * While procedures are not as well defined as those for experimental research, case study research should involve the development of an initial hypothesis or set of questions, and the design of research tools, protocols and field procedures. * Case studies can involve single or multiple units of analysis (individuals, depart- ments, objects, systems, etc.) in combination with single or multiple case designs. * In case studies, researchers should aim to collect multiple sources of evidence that should evolve into a chain of evidence, linking research questions, data, analysis and case study reports. * Data for case studies are typically collected from multiple sources including docu- mentation, archives, interviews and direct or participant observation. * Internal validity in case studies is strengthened by pattern matching, explanation building and time-series analysis. Reliability is strengthened by multiple replication of the same or similar cases. |

**Further reading**

Yin, R.K. (1994) *Case Study Research: Design and Methods*, 2nd edn. Thousand Oaks, CA: Sage. Yin is widely recognized as one of the leading authorities on case study design. There is no better starting point.

Gomm, R., Hammersley, M. and Foster, P. (eds) (2000) *Case Study Method: Key Issues, Key Texts.* London: Sage. Not for the novice researcher, this book explores some of the complex issues associated with case study research, including external validity and the generation of theory.

|  |  |
| --- | --- |
| **Suggested answers for Activity 6.2** |  |
| 1 The implicit working hypothesis is that taxi-dance halls are dens of vice and corruption.  *(Continued)* | |

1. The multiple sources of evidence used include observation (of people arriving, their means of transport, the look and demenour of both clients and taxi-dancers, etc.), and interviews with clients, taxi-dancers and the owners of the halls.
2. This is a matter of interpretation! Clearly, however, the hypothesis that the halls are merely vice dens is too simplistic. Both the taxi-dance girls and their clients reveal a wide mixture of hopes, aspirations and incentives.

|  |  |
| --- | --- |
| **Suggested answers for Activity 6.3** |  |
| 1. Research questions might include: (a) What is the attitude of customers towards the new system? (b) What is the attitude of staff to the system? Does the system work – are customers able to understand and use it? 2. Data collection methods could include covert observation of the customers as they arrive to see how easily they manage to use the new system. Later, a selected sample of customers could be interviewed as they left the build- ing to ascertain their views on the system. The views of staff could be tapped through a small-scale survey using a structured questionnaire (perhaps dis- tributed in the next issue of the company newsletter). | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 6.4** |  |
| 1 The source of measurement would include the number of orders filled to specific timescales, levels of customer satisfaction, the scale of print runs and the levels of employee satisfaction.  2. Independent variables include the new team structures, but you would need to look out for other extraneous variables that might confound the results (for example, do some teams contain more experienced workers?). Since the project is looking at the impact of different combinations of work- ers (compared to the old one) then sub-cases would be used, comprising each of the new team structures. One sub-group could comprise the old structure which could then act as a control to see if the more collaborative team approach was, indeed, more effective. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 6.5** |  |
| The new retail park is acting as an independent variable on its environment, within which dependent variables include urban degeneration, traffic conges- tion and crime. One of the challenges here is to measure the impact of the retail park itself, since there are likely to be many other independent variables at work. Taking just traffic as an example, car ownership tends to rise over time, so will add to traffic congestion. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 6.7** |  |
| 1. The theoretical underpinning of the study revolves around the literature on management–worker relationships in Japanese transplant companies. 2. Data collection sources include secondary sources (previous studies), interviews with 10 per cent of company managers, some key informants in the locality, documentary evidence on company policies, plus observa- tional data. 3. The protocols used for data collection are illustrated in the template at Table 6.4. 4. The analytical method comprises a form of explanation building. 5. The original hypothesis could be accepted on the basis of the results. | |

**Designing Evaluations**

**7**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Describe the purposes of evaluations.**
* **Distinguish between the different schools of evaluation.**
* **Identify suitable data collection sources.**
* **Design valid and reliable evaluation tools.**
* **Produce readable and informative evaluation reports.**
* **Adhere to ethical principles in conducting evaluations.**

Often surveys (Chapter 5) can be used to evaluate public perceptions of a product or service. Equally, a case study approach (Chapter 6) can be adopted, which consists of the evaluation of, say, a new factory system or process. Evaluation involves the systematic collection of data about the characteristics of a pro- gramme, product, policy or service. As part of this process, evaluation will often explore what needs to be changed, the procedures that are most likely to bring about this change, and whether there is evidence that change has occurred (Warr et al*.,* 1970). Indeed, as Clarke (1999) points out, while the purpose of basic research is to discover new knowledge, evaluation research studies show how existing knowledge is used to inform and guide practical action. A significant amount of evaluation research revolves around training or professional develop- ment programmes, and some of the chapter will focus on this area.

Interest in the process of evaluation can be traced back to the 1970s and

was strongly influenced by the work of Donald Kirkpatrick, who focused on the evaluation of programmes.The emphasis was often on the accuracy, or otherwise, of evaluation measuring techniques, and was strongly positivist in orientation (Lincoln, 1985). In recent years, with the expansion of action learning, work- related learning and self-development programmes, learning is now seen as aris- ing *within* and *through* the work situation rather than just through formal programmes. Hence, for evaluation, the focus has shifted to a certain extent away

from measurement and towards issues of *what* is evaluated, *why* and *for whom*.This includes issues around subjectivity and the ethics of evaluation.

It has been suggested by Campbell (1997) that the process of evaluation suf- fers from a lack of accurate and complete information, bad information or untimely information, that is, a lack of information when it is really needed. In this chapter, then, we will look at different sources for collecting data for evalua- tion, and the design of valid and reliable tools for use in the field.We will also look at ways of enhancing the quality and accuracy of evaluation studies and therefore the chances of them being accepted by their sponsors – so that the effort of plan- ning and implementing an evaluation study produces positive outcomes.

**THE FOCUS OF EVALUATION**

In his original, seminal work, Kirkpatrick (1959) made recommendations for evalu- ation that have laid the basis for thinking about the subject ever since. He argues that, in essence, the evaluation of training programmes should concentrate on four levels:

* *Level 1, Reaction:* evaluating the reactions of trainees to the programme (usually by the use of a questionnaire).
* *Level 2, Learning:* measuring the knowledge, skills and attitudes that result from the programme and which were specified as training objectives.
* *Level 3, Behaviour:* measuring aspects of improved job performance that are related to the training objectives.
* *Level, 4 Results:* relating the results of the training to organizational objectives and other criteria of effectiveness.

Unfortunately, as Bramley and Kitson (1994) suggest, in the UK and USA over 80 per cent of training is only evaluated at Level 1, with participants comment- ing on how much they enjoyed or thought they benefited from the programme. This information is gathered through the issue of evaluation forms or, in modern jargon, ‘happiness sheets’.

At Level 2, Rowe (1995) distinguishes between three levels of work-related outputs:

* Knowledge (understanding of a subject or skill).
* Skill (the practice of the skill itself).
* Competence (showing one’s ability in applying a skill).

As Rowe points out, competence often means ‘the minimal standard required’, whereas in many work situations what is needed is *excellence* in performance. Also, many highly competent teams will include incompetent individuals. Perhaps, then, it is the competence of teams that we should be evaluating.

Bramley and Kitson (1994) caution that the problems of evaluating at Levels 3 and 4 are not well understood. Measuring changes in job performance,

|  |
| --- |
| ***Behaviours expected of, and benefits to, trainees*** |
| Improved and new skills, leading to: |
| * Improved job prospects |
| * Higher earnings |
| * Access to more interesting jobs |
| * Improved job satisfaction   ***Behaviours expected of, and benefits to, supervisors and line managers*** |
| Improved and new skills, leading to: |
| * Increased output |
| * Higher value of output |
| * Greater flexibility and innovativeness |
| * Likelihood of staying longer |
| * Less likelihood of sickness/stress |
| * Less likelihood of absence |
| * Less need to supervise |
| * Increased safety   ***Benefits to customers*** |
| * Better quality work |
| * Less need to return work |
| * More 'on time' deliveries |

**FIGURE 7.1** COST–BENEFIT ANALYSIS OF A PROPOSED TRAINING EVENT (ADAPTED FROM BRAMLEY AND KITSON, 1994)

for example, is problematic, partly because of the amount of work involved in designing measurement criteria. They proceed, however, to offer some solutions. As Figure 7.1 shows, cost–benefit analysis is one way of measuring the benefits emerging from a programme, described as a list of performance indicators.

|  |  |
| --- | --- |
| **Activity 7.1** |  |
| Taking Figure 7.1, think of ways of measuring some of the performance indicators listed. What sort of data should be collected? Are some indicators easier to measure than others?  *Suggested answers are provided at the end of the chapter.* | |

Another way of evaluating the effectiveness of a programme is through impact analysis. Here, all stakeholders get together before the start of the pro- gramme and discuss its objectives and the behaviours that are likely to change as a result. Through a snowballing process, each participant is asked to write down the three results they see as most important. These are pinned to a noticeboard, then reorganized into clusters or themes. Each cluster is then given a title, and stakeholders asked to award ten points across the clusters so that a ranking of clus- ters is achieved. Having done this, enabling and inhibiting factors are discussed to create a force-field analysis. Finally, stakeholders discuss how the purposes of the programme can be evaluated. The following Case Study provides yet another approach to programme evaluation, and one that is widely used in business and organizational contexts.

|  |  |
| --- | --- |
| **Activity 7.2** |  |
| Take a programme or change process with which you are familiar and conduct a force-field analysis on it. This works better if you are able to conduct the eval- uation with colleagues who are also familiar with the programme/process. How useful is force-field analysis as an evaluation method? | |

An increasingly popular focus of evaluation is through the Total Quality Management (TQM) process, the European model of which is set out in Figure 7.3. As Bramley and Kitson explain, each of these nine elements can be analysed in terms of an organization’s progress towards TQM. Hence, leadership is defined as ‘How the executive team and all other managers inspire and drive total quality as the organization’s fundamental process for continuous improvement’ (Bramley and Kitson, 1994: 14). Since the focus of evaluation is results, this is at Level 4 of Kirkpatrick’s (1959) model.

Focusing on outputs, however, may cause us to miss other important fea- tures that deserve evaluation. Easterby-Smith (1994), for example, argues that it is virtually impossible to understand a programme without evaluating the *context* in which it takes place. This might include why the programme was sponsored or devised in the first place (and any differences between overt and hidden agendas), and the different aims and objectives of the various stakeholders.Another focus of evaluation could include *administration*. This includes the processes that occur before the training (for example, nomination for the training, selection of participants)

Processes

Leadership

Resources

People satisfaction

Customer satisfaction

Impact on society

Business results

People management

Policy and strategy

*Enables * *Results*

**FIGURE 7.3** THE EUROPEAN TQM MODEL (BRAMLEY AND KITSON, 1994)

and what happens once the training is complete (such as follow-up activities).The selection of candidates is often an illuminating place to start.They may find them- selves on a programme because they have been identified as a ‘high flier’, but alter- natively it may be because they have been underperforming on the job, and need help.

Evaluation schemes that concentrate narrowly on inputs and outputs of programmes are in danger of missing vital, often illuminating information on *processes*. Process evaluation may involve merely observing what is occurring and keeping a narrative record of events. But it may go further than this, trying to understand the programme or event from the perspective of participants. Another element of process evaluation might be to focus on interactions between facilita- tors and participants or between participants themselves. Process evaluation may not only describe events, but seek to *interpret* what is happening. Table 7.1 pro- vides an overview of all the many different types of evaluation, some of which we have mentioned above.

Two of the evaluation types in Table 7.1, formative and summative, have a long pedigree. Scriven (1967) uses these terms to describe educational curricula, and the terms have been widely used in an educational context ever since. Formative evaluation is undertaken to provide feedback to people who are trying to improve something. It is often relatively informal, with the evaluator working alongside practitioners to identify the strengths and weaknesses of a programme or intervention. In contrast, summative evaluation aims to determine the overall effectiveness of a programme or project, and to provide a judgement on whether it should continue to run. Summative evaluation is usually more formal in charac- ter, with the evaluator operating in a more independent role. In formative evaluation,

**TABLE 7.1** TYPES OF EVALUATION AND THEIR DEFINING QUESTION OR APPROACH

**Focus or type of evaluation Key questions or approach**

Accreditation (validation) Does the programme meet minimum standards for focus accreditation (validation)?

Comparative focus How do two or more programmes rank or compare on

specific indicators, outcomes or criteria?

Compliance focus Are rules and regulations followed?

Context focus What is the social, economic, political and cultural environment within which the programme operates?

Cost–benefit analysis What is the relationship between programme costs and

programme benefits (outcomes) expressed in monetary terms?

Criterion-focused evaluation By what criteria (quality, costs, client satisfaction) should the programme be evaluated?

Decision focus What information is needed to inform specific future decisions?

Descriptive focus What happens in the programme? What can be observed?

Effectiveness focus To what extent is the programme effective in attaining its

goals? How can the programme be more effective?

Efficiency focus Can inputs be reduced and the same level of output be main-

tained? Can outputs be increased with no increase in inputs?

Formative evaluation How can the programme be improved (during its planning and delivery phases)?

Goal-based focus To what extent have the programme goals been attained?

Impact focus What are the direct and indirect impacts on participants, the organization, the community?

Input focus What resources (money, staff, facilities, technology, etc.) are available and/or necessary?

Knowledge focus What can be learned from this programme’s experiences and results to inform future efforts?

Longitudinal focus What happens to the programme and to participants over

time?

Needs assessment What do clients need and how can these needs be met?

Norm referenced approach How does this programme population compare to some

specific norm or reference groups on selected variables?

Outcomes evaluation To what extent are desired clients/participant outcomes being

attained? What are the effects of the programme on clients or participants?

*(Continued)*

**TABLE 7.1** *(Continued)*

**Focus or type of evaluation Key questions or approach**

Process focus What do participants experience on the programme? How can these processes be improved?

Quality assurance Are minimum standards (of teaching/training/health care,

etc.) being provided? How can quality be monitored and demonstrated?

Summative evaluation What is the overall merit or worth of the programme? Should

it be modified? Should it be continued?

*Source*: Adapted from Patton, 1984

feedback to practitioners may be written or provided through discussions, but in summative evaluation feedback is usually in the form of a formal, written report to the commissioning body.

|  |  |
| --- | --- |
| **Activity 7.3** |  |
| Take a look at the various types of evaluation in Table 7.1. Which of these would you consider selecting for your own evaluation projects? Can several approaches be combined at the same time? | |

Clearly, these different approaches to evaluation stem from differences of opinion as to what evaluation is for. Such differences can be classified into schools of evaluation, to which we now turn.

**SCHOOLS OF EVALUATION**

Easterby-Smith (1994) categorizes the various approaches to evaluation into four schools of thought: experimental, systems, illuminative and goal-free.To these we can add: decision making, goal-based, professional review and interventionist (see Figure 7.4). It is worth noting the views of Ballantine et al. (2000) that the philo- sophy underlying an evaluation has a great influence on how it is conducted, the tools used and also its goals. So, evaluations that focus on technical issues (such as computer information systems) are likely to be summative and formal in approach, regarding people as automata, or mere cogs in a process (see experi- mental and systems evaluation). In contrast, the more moral approach to evalua- tion is likely to be more formative and human-centred (see illuminative and goal-free evaluation). Clearly, implicit in some of these approaches are some of the ontological and epistemological assumptions discussed in Chapter 2.

The role of the evaluator is likely to be quite different according to which

type of evaluation process is being followed. For example, in more formal, ‘scien- tific’ approaches, the evaluator may often be an independent and detached ‘out- sider’ providing feedback to a commissioning body. In contructivist or more

**RESEARCH**

Experimental

Illuminative Goal-free

**SCIENTIFIC CONSTRUCTIVIST**

Systems

Decision making Goal-based Professional review

Interventionist

**PRAGMATIC**

**FIGURE 7.4** MODEL OF SCHOOLS OF THOUGHT IN EVALUATION (ADAPTED FROM EASTERBY-SMITH, 1994)

naturalistic approaches, the evaluator may work quite closely with practitioners in a more collaborative, participatory style, acting not only as an evaluator but as a facilitator of change.The evaluator is expected to enter the evaluation setting free of predetermined views, and hence is unlikely to start with a particular research design or set of research questions.These emerge as part of the process of inquiry. Evaluators approach the research context with an open mind.

***Experimental evaluation***

*Experimental* evaluation seeks to demonstrate that any observed change in behav- iour or outcomes can be attributed to the intervention (for example, the training or development provided).There is an emphasis on research design, and quantita- tive measurement, and sometimes the use of control groups and treatment groups – just as we would expect to see in any, typical, experimental approach. Clarke (1999) posits the example of a training programme for the unemployed. An eval- uator may attempt to measure the causal effect of the programme by comparing the future employment records of those who participated in the programme with unemployed adults living either in the area where no training is provided, or residing in the same area but receiving no training.

Easterby-Smith (1994), however, cautions that there are a number of rea- sons why experimental evaluation may have limited applications. For example, if statistical techniques are going to be applied, sample sizes must be sufficiently large. If control groups are used, they must be properly matched to the experi- mental group; even when associations between variables can be identified, there is still the problem of showing causality, that is, that changes in one variable led

**TABLE 7.2** AN EVALUATION SCHEMA BASED ON THE SYSTEMS APPROACH

**Part 1 Plan the evaluation**

* 1. Determine evaluation requirements
  2. Specify evaluation purposes and objectives
  3. Identify sources of information
  4. Prepare an evaluation schedule with stakeholder involvement

**Part 2 Collect and interpret information/data**

* 1. Prepare and pilot test instrument(s)
  2. Administer instrument(s)
  3. Collect and tally data

**Part 3 Prepare recommendations and an action plan**

* 1. Formulate recommendations
  2. Draw up a plan for corrective action
  3. Write a report

*Source*: Campbell, 1997, adapted from L’Angella

to changes in the other. Clarke (1999) also argues that experimental evaluation faces all the kinds of problems that typify experimental research in general. For example, there may be differential attrition rates between the experimental and control groups, meaning that the two groups are no longer equivalent. Furthermore, the research may actually serve to create inequalities between the two groups, since one group receives the treatment and the other does not. This can work in unexpected ways. For example, if the control group learns that it *is* a control, members may be tempted to perform better than the experimental group; conversely, they may feel deprived and resentful and their performance may deteriorate.

***Systems evaluation***

In the *systems* approach, there is emphasis on specifying the objectives of the eval- uation, with identifying outcomes, and on providing feedback on these outcomes to those providing the training. An example of the systems approach process is provided by Campbell (1997), who describes a schema for conducting an evalu- ation (see Table 7.2).

A typical example of systems evaluation would be where evaluators are brought in to investigate the effectiveness of a new financial accounting system. Objectives might be discussed with stakeholders and defined as:

* + - How robust is the system – does it ‘crash’?
    - Does its functionality match the original specifications?
    - How ‘user-friendly’ is the system, and what are its implications for staff devel- opment and training?

A structured evaluation schedule is then drawn up containing questions matched against design specifications. An interview schedule is also designed so

that issues can be explored with those who work on the system. Once the data have been collected, they are analysed and a formal report prepared containing recommendations for change.

One of the criticisms of the systems approach is that it represents rather a mechanistic view of the world that fails to recognize that objectives, for example, can never be neutral. Critics of the approach would point out that objectives tend to be selected by one particular social group (for example, often senior managers) and reflect the vested interests of such groups. A systems approach to evaluation may also fail to pick up the subtleties and complexities of both the products and processes of training or systems because it does not recognize that such complex- ities exist.

***Goal-based evaluation***

Like systems evaluation, goal-based evaluation is focused on the achievement of pragmatic outcomes. Here, however, the emphasis is not so much on designing sys- tems to measure outcomes, but on identifying any discrepancies between planned and actual goals.This evaluation approach has been extensively used by education- alists from the behavioural school, who believe that the outcomes of programmes should be expressed in behavioural terms (for example, ‘the learner should be able to *demonstrate* the ability to plan a project’). This does, however, raise questions about the extent to which what is observed in terms of human behaviours infers what people are actually thinking. It also assumes that the stated goals of a programme against which outcomes are to be evaluated can be accepted at face value. Yet people may hold tacit goals that they choose not to articulate or are not consciously aware of. Furthermore, there are issues of democracy and power relationships: who selects the goals that are to be evaluated? Whose interests do they represent?

***Decision making evaluation***

The decision making approach suggests that evaluation should be structured by the decisions that need to be made – often by top decision makers or managers. This resolves one of the evaluator’s dilemmas of not always knowing at whom the eval- uation should be directed (House, 1980). A drawback is that it can often ignore other potentially interested parties and stakeholders, although this can be overcome to some extent by gathering evaluative data from groups outside the original spon- sors of the evaluation. As an evaluation approach it makes extensive use of survey methodology, often using tools such as questionnaires and interviews.

***Professional review: validation and accreditation***

Many professional associations for people such as lawyers, accountants, doctors, social workers, consultants and human resource managers set professional standards

and then assess and accredit individual members of the profession against these standards. Indeed, possession of the prerequisite accreditation is often the passport required for entry into the profession. If professional training and assessment are delivered by organizations (such as institutions of higher education) external to the professional association itself, then the association is likely to set in motion evaluation (validation) processes to assure the quality of the training and professional development programmes.

In many countries, validation is seen as an essential quality assurance process to ensure appropriate standards for courses delivered by colleges and universities. In the UK, for example, the Quality Assurance Agency for Higher Education sets out a code of practice for the approval, monitoring and review of programmes (QAA, 2000). Hence, higher education institutions are charged with the task of ensuring that programmes are compatible with the goals and mission of the insti- tution and with its academic planning and resources. In the course of the approval (validation) process, institutions are asked to give consideration to:

* + - The design principles underpinning the programme.
    - The definition and appropriateness of standards in accordance with the level and title of the award.
    - The resources needed and available to support the programme.
    - Anticipated demand for the programme.
    - Monitoring and review arrangements.
    - The length of time for which approval is granted (which will normally be between one and five years).
    - The contents of the programme specifications.

On-going monitoring will normally be undertaken by the department delivering the programme and will include the use of student feedback (often through eval- uation forms), student progress information, reports from accrediting or other external bodies and examiners’ reports (an important form of external evaluation of assessment standards).

***Illuminative evaluation***

Illuminative evaluation takes a much more flexible and open-ended approach. Rather than focus on measurement, it seeks the views of participants, recognizing that there are ‘multiple perspectives’ on any matter under scrutiny. So illuminative evaluation will seek to promote communal awareness about a programme, rather than aiming to achieve pre-specified outcomes, results and recommendations. In terms of methodology, it is often associated with the case study approach we dis- cussed in Chapter 6 and will tend to use qualitative methods such as in-depth interviews and direct observations of programme activities.

A danger of using illuminative evaluation, apart from the time and costs involved, is that clients and sponsors may want more than just ‘illumination’, but rather results that can lead to action.These do not always emerge from approaches of this kind. Furthermore, as with the case study approach in general, the results

may be heavily influenced by the subjective views of the evaluator. As House (1980) warns, illuminative evaluation faces the difficulty of proving its authenticity and confidence in its outcomes.

***Goal-free evaluation***

Goal-free evaluation suggests that evaluations should totally ignore the formal objectives of a programme, since these may fail to reflect what is actually hap- pening. Indeed, according to Scriven (1973), knowing the goals of a programme will bias the evaluator.The evaluation, then, should aim to look for unanticipated outcomes and, above all, processes. So this may mean observing pre-course plan- ning meetings, mixing with participants socially and discussing the training event with them afterwards. In terms of research paradigms, goal-free evaluation may typify a constructivist approach, exploring how participants make sense of their experiences. Ballantine et al. (2000) support this approach, arguing that evaluation should look less at financial measures, and more at subjective views where per- sonal judgements are made explicit.The results of this approach to evaluation may reveal illuminating insights but may not always produce results that can easily be implemented. There are also the dangers of the objectivity of evaluations being compromised by evaluators becoming too involved in events.

***Interventionist evaluation and action research***

This encompasses a number of different approaches, but here we will focus on two of the most widely used. In contrast to experimental evaluation that uses pre- defined objectives and measuring instruments, *responsive* evaluation concentrates on a programme’s activities rather than its planned intentions, and explores the different stakeholder perspectives involved. Responsive evaluation, as the name implies, is more likely to be adaptive as the needs and circumstances around a pro- gramme change. Rather than act in a detached capacity, responsive evaluation favours the evaluator in a more involved, interventionist mode, often working in close collaboration with programme staff and participants.

Another approach to interventionist evaluation is *utilization focused* evalua- tion. Here, the stress is on the importance of identifying the motives of key deci- sion makers before deciding on what types of information need to be collected. So evaluators must discuss with stakeholders both before, during and after the programme what it is that they need to know and the ends to which the emerging data may be put.This has much in common with action research (see Chapter 15), in which practitioners set out to solve problems through planning, implementing and evaluating change processes and strategies.

Both approaches have in common a commitment to achieve a direct impact on a programme and those involved in it. One problem with interventionist evalu- ation is that it might become too adaptive to changing situations, with evaluators becoming too involved with clients to maintain detachment and objectivity.

**DATA COLLECTION SOURCES**

There are many channels available for collecting data, and the type of medium used will often depend on the objectives of the evaluation. Easterby-Smith (1994) suggests that there are three kinds of medium available, all of which are discussed in detail in other parts of this book. The media comprise: the use of *informants,* where data are collected through, for example, questionnaires (Chapter 8); direct *observations* by the evaluator of what is taking place (Chapter 10); and accumulated *records* of what has taken place in the past (Chapter 11). In this section, then, we will only look at some ideas that are specific to the evaluation process.

***Informants***

Easterby-Smith (1994) classifies informants into four categories: direct partici- pants, observers, controls and stakeholders.

* + - *Direct informants* are the programme delegates and the tutors or facilitators. Depending on the extent of their involvement, it might also include pro- gramme sponsors or the colleagues of programme participants.
    - *Observers* may include course participants, if they are able to become suffi- ciently emotionally detached to be able to comment on the outcomes and processes objectively. The views of managers and sponsors can be useful in commenting on the effectiveness of a programme in terms of its impact on the subsequent work performance of learners.
    - *Controls* are identical to the people in the experimental group, except that they do not receive the intervention. Using this approach, it is possible, in princi- ple, to measure the effectiveness of a training or development programme. As we saw in Chapter 4, however, it is often difficult to find two groups that can be matched in this way and also difficult to control for the effects of extrane- ous variables.
    - *Stakeholders* are those who do not have direct contact with a programme but have a legitimate interest in it none the less. Top managers, for example, may be very interested in the success of a sponsored MBA programme because it is hoped that some ‘high fliers’ will emerge that are vital for medium-term succession-planning at executive level.

***Observations***

Evaluating a training session or project by observing it may appear not only a per- fectly sensible but also a fairly unproblematic approach.As we will see in Chapter 10, however, there are different ways of observing, including overt and covert obser- vation and evaluating a programme or project by joining it as a participant or from the outside as a non-participant. Covert observation whether as a participant or looking in from the outside may reveal information that would not emerge if

participants knew they were under scrutiny. Of course, the fact that they are being observed secretly raises ethical issues that require addressing.

Whichever approach is adopted, it is simply not possible to observe every- thing that occurs. Those that advocate using a video recorder to solve this prob- lem forget that even this medium is selective in what it can ‘see’. Of course, observing, taking notes and using video and audio media all help to build data sets that can provide a more comprehensive (reliable) picture for subsequent analysis. For practical purposes, it may be necessary to be selective in collecting data, which may involve a number of approaches including:

* *Time sampling*. Here ‘snapshot’ observations are made over a period of time. For example, as part of a job evaluation study a shop floor packer could be observed every 20 minutes against the categories: walking, packing, discussing, requesting, taking instructions, absent.
* *Incident sampling*, involves looking for critical incidents that might have an important impact on what is being evaluated. For example, a training pro- gramme may involve arguments and hostility between participants that could be documented.
* *People sampling,* involves observing a sample of people in the belief that the sample selected is representative of the population from which it is drawn. So, in evaluating the impact of a new bonus scheme, a number of people who had recently received bonuses would be observed to evaluate whether this had had any impact on their behaviour or performance.
* *Analytical categories sampling* involves looking for, and recording, instances of specific behaviours or verbal interchanges.A classic example of this is the work of Bales (1950), who observed interactions amongst groups to determine broad categories of group behaviour comprising: asking questions, attempted answers to these questions, followed by either positive or negative reactions.

Methods of recording the data collected using these techniques are examined in detail in Chapter 10.

***Accumulated records***

While the use of informants and observations requires the collection of data in the field, it is possible to evaluate programmes on the basis of data that were collected in the past. Examples of typical sources include:

* Programme or project plans and specifications.
* Communications between those responsible for the commissioning, planning or delivery processes.
* Comments written on flipcharts.
* E-mails between participants.

Records, for example, might also show that it is taking participants longer than in the past to achieve a particular programme objective – based on this fact, personnel

records might be checked to see if recruitment standards were being observed (Campbell, 1997). Sometimes, it is the lack of recorded information that might be significant – for example, the fact that few participants completed the pre-course activities that were vital to the programme’s success. Accumulated records are an example of unobtrusive measures that are discussed in more detail on Chapter 11. Having identified appropriate sources, the next step is actually to collect the data.

**DATA COLLECTION TOOLS**

There are a wide variety of tools available for collecting evaluation data, some of the commonest techniques including questionnaires and interview schedules. Since these are discussed in considerable depth in Chapters 8 and 9 respectively, they will be discussed only briefly here. As in any type of questionnaire, the con- tent must be designed to be both valid and reliable. In Figure 7.5, for example, 18 questions are asked about a training programme – probably a sufficient number to produce a reliable estimate of people’s opinions. Note that Campbell (1997) calls this not a questionnaire but an opinnionnaire, since it is eliciting participants’ opinions about a training programme.

It is worth, however, noting the concern of Campbell (1997), who warns against too much reliance being placed on the use of numerical ratings and sta- tistical calculations in evaluation questionnaires. He cautions that the data on the feelings and opinions collected remain subjective.

***Assessment tests***

It is important to differentiate between assessment and evaluation. Put simply, we evaluate products, policies, programmes, etc., but we assess people. So what is the connection between evaluation and assessment? The answer is that we can evalu- ate the success of a programme by assessing what people have learned from it in terms of knowledge, skills or comprehension – and above all, performance. Hence, controlling for other variables, if post-course assessments reveal that new skills and knowledge have been acquired, we can attribute this (through evalua- tion) to the training programme itself.Thus, the outcomes of assessment can com- prise an important element of the evaluation process.

***Repertory grid***

The repertory grid technique is based upon the original work of Kelly (1955), who argued that people’s behaviour is influenced by the way in which they clas- sify what is going on around them. People construe and interpret events, noting features of a series of events that characterize some and are particularly uncharac- teristic of others. In doing this, they erect constructs involving similarity and con- trast. So, if someone is construed as having leadership qualities, this would imply

***Directions***: Please read the following 13 statements and indicate your level of disagreement or agreement by making a check mark in the column that corresponds to your opinion. Add a written comment to support your opinion on the line provided below each statement.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Statements | Strongly disagree | Disagree | Agree | Strongly agree |
| 1 Learning objectives were adequately | □ | □ | □ | □ |

discussed at the beginning of sessions

Comment

1. Including learning objectives on □ □ □ □

instructional materials enhanced learning

Comment

1. The instruction included all that was □ □ □ □

necessary to perform

Comment

1. Sufficient opportunities were provided □ □ □ □

to practise the skills taught

Comment

1. The instructor encouraged trainee □ □ □ □

involvement

Comment

1. The instructor was available for help □ □ □ □

when needed

Comment

1. The instructional methods used □ □ □ □

(lecture-discussion, demonstration, etc.) helped me learn

Comment

1. The audio-visual media used □ □ □ □

(transparencies, video tapes, etc.) and training aids used helped me understand

Comment

*(Continued)*

1. The instructional materials used (books, modules, job performance aids,

instruction sheets, etc.) helped me learn □ □ □ □

Comment

1. The criterion-referenced performance □ □ □ □

tests helped me become proficient

Comment

1. The training environment enhanced my □ □ □ □

motivation and helped me learn

Comment

1. All the necessary tools and equipment □ □ □ □

were available

Comment

1. The facilities in which training took □ □ □ □

place supported my learning

Comment

**Directions: Please write your answer to items 14 to 18 on the lines provided**

1. What subject/topics should be added?
2. What subjects/topics should be deleted?
3. What part of the training was most helpful?
4. What part of the training was least helpful?
5. What changes do you recommend for the future?

**Your feedback will remain confidential and your assistance is greatly appreciated.**

**THANK YOU.**

**FIGURE 7.5** SAMPLE OPINIONNAIRE (ADAPTED FROM CAMPBELL, 1997)

they shared similar characteristics to other people seen to have this quality *and* contrast with characteristics shown by people with no leadership ability. But this does not imply that the person identified as a leader would be seen in this light by everyone. Constructs are personal, with different individuals giving different

interpretations of events or characteristics. They are also hierarchical, with some constructs seen as more important than others. In particular, *core* constructs allow an individual to maintain their sense of identity and continuing existence, while *peripheral* constructs can be altered without any change in core structures. Some (permeable) constructs may change on the basis of new evidence, but other con- structs (impermeable) prove more resistant to change. Hence, a technique is used, the repertory grid, to elicit these constructs for analysis and interpretation. Since the result of using this technique is the production of quantitative data, repertory grids have proved popular for evaluating the outputs from training programmes in terms of people’s views, behaviours or perceptions.

Using an example (Figure 7.6), let us say we want to evaluate an organiza- tion’s appraisal system through the perspectives of an employee. Designing a ques- tionnaire or interview schedule might bias the evaluation towards the issues and concerns of the evaluator. Using personal construct theory, however, this should not occur. The employee is asked to identify a set of events connected to her recent appraisal that were of particular significance to her (Elements in Figure 7.6). She is asked to identify what it was about these elements (constructs) that had been of particular significance to her. Hence, for example, she decided that she had found some elements motivating whilst others were demotivating. She then uses the grid to allocate a score between 1 and 4 against each of her constructs for each of the elements.

Just glancing at Figure 7.6 reveals some quite startling results.We can see that the appraisee found nearly all aspects of the appraisal process either fairly or com- pletely demotivating.The reasons for this are not hard to identify.While she found the preparation of the documentation for the appraisal very helpful (perhaps in focusing her thoughts and identifying her achievements) if time-consuming, the actual appraisal itself obviously did not go well. She found the reviewing of progress and the setting of new work objectives not at all helpful – indeed, destructive. Feelings rather than analysis emerged – and probably very negative feelings at that.

This is a relatively simple example of a repertory grid, with some detailed and complex examples benefiting from the use of especially designed computer software programs. Nevertheless, it serves to illustrate the power of allowing someone to identify their own constructs and interpretation of events. From an evaluation perspective, it allows us to identify which aspects of the appraisal pro- gramme may need review and overhaul – in this case, not the documentation, but the interaction dynamics between appraiser and appraisee. Perhaps we should continue the evaluation by looking at the appraiser’s personnel records – is he sufficiently trained?

***Critical incidents***

A critical incident is something that produces an emotional response (whether positive or negative) in a person (Gray et al., 2000). As an evaluation tool, this is a qualitative approach that asks participants to comment on such events, often through the use of a log or diary (see next).There may be a pact between evaluators

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | **Significant ELEMENTS of the appraisal** | | | |
| Pre-appraisal planning | Appraisal: reviewing progress | Appraisal: agreeing objectives | Post-appraisal: documenting/signing |
| **1** | **2** | **3** | **4** |
| **CONSTRUCTS** | Motivating | 1 | 2 | 3 | 4 | Demotivating | 3 | 3 | 4 | 3 |
| Helpful | 1 | 2 | 3 | 4 | Unhelpful | 1 | 3 | 3 | 3 |
| Quick | 1 | 2 | 3 | 4 | Time- consuming | 4 | 1 | 3 | 1 |
| Encouraged analysis | 1 | 2 | 3 | 4 | Encouraged feeling | 2 | 4 | 4 | 3 |
| Creative | 1 | 2 | 3 | 4 | Destructive | 1 | 3 | 4 | 3 |

**FIGURE 7.6** REPERTORY GRID SHOWING AN INDIVIDUAL’S CONSTRUCTS OF AN APPRAISAL

and participants before the start of the evaluation process whereby such diaries are acknowledged to be confidential, with participants revealing and commenting on only those critical incidents they are willing to divulge.

The analysis of critical incidents may also be useful in the workplace itself. Here the effectiveness of a training or development programme is evaluated (say, by managers or supervisors) when they see how staff respond to critical incidents following a training programme.

***Learning logs***

We have already seen how logs or diaries can be used to keep a note of critical incidents. But they can also be used by participants to keep a note of any events, incidents, thoughts, learning outcomes or unanticipated results of a programme. This can often provide a rich source of illuminative data for evaluation – providing that participants are willing to divulge the contents of such logs.

**QUALITY ISSUES IN EVALUATION**

One of the challenges of evaluations is that there are no precise rules on how to plan and implement them. Judgement is called for. As Patton (1984) warns, an inevitable trade-off will be faced between gathering as much data as possible (and then face the costs of doing so) or reducing costs, time and hence data, but then reducing confidence in the evaluation findings. Looking at a problem in depth may produce detailed results but leave other problems unanswered; conversely, examining a range of problems might provide insufficient depth to be able to arrive at any sensible conclusions. So, especially at the planning stage, an evalua- tor needs to decide on what aspects of a programme should be evaluated, and whether all the outcomes require scrutiny or only selected elements.The evalua- tor’s role, then, may be to get stakeholders or sponsors to narrow the focus of the evaluation to a more feasible list of questions.

The quality of any evaluation process is also deeply influenced by the familiar

issues of validity, reliability and objectivity. Let us look at each of these in turn, within the context of the evaluation process.

***Validity***

As we saw in Chapter 4, for a research instrument to be valid, it must measure what it was intended to measure. Sometimes face validity may be sufficient, that is, the extent to which an instrument *looks* as though it will measure what it is intended to measure. This, rather unscientific approach is held in low regard by measurement experts. Patton (1984), however, advises more optimistically that it may have some value. It may, for example, help managers and those responsible for implementing evaluation findings to have confidence in the evaluation instru- ment – and hence in the evaluation results. House (1980) suggests that goal-based evaluations often offer high levels of face validity because their objectives are made explicit to all concerned.

One of the most sought after measurements is that of predictive validity, that is, the extent to which the results of an evaluation can be used to predict events, usually the impact of a programme on participant performance. As we saw earlier, one of the weaknesses of many evaluation studies is that they tend to focus on whether participants liked, or thought they benefited from, the programme rather than measuring whether new skills or attitudes resulted.

As Patton (1990) points out, validity may be threatened when observation methods are being used and participants know that they are being observed.This is because they may behave quite differently in situations where they are not observed. This suggests that covert observation may be more valid and reliable (although ethical considerations then arise).Yet, it needs to be borne in mind that even covert observation only picks up observable behaviours and not what is in people’s minds. The data, therefore, are selective. Validity may be improved by long-term observations where observers and participants get to know one another (longitudinal evaluation, see Table 7.1).

House (1980) contends that systems evaluation often tends to produce valid and reliable evidence because data are produced in a way that lends them to repli- cation by other evaluators. Contrast this with other evaluation approaches where data can involve large elements of personal interpretation. Reay (1994) provides a useful example (Case Study 7.2) of what can, at least potentially, go wrong when the evaluation process fails to address validity issues.

|  |
| --- |
| **Case Study 7.2 Invalid evaluation – getting it wrong on a Friday afternoon**  A company training department trained workers in the goods depot to stock-take every Friday afternoon. All aspects of stock-taking were demonstrated and explained and at the end of the course there was an evaluation which gathered data on the costs of the training programme (including down time and the costs incurred in lost production when trainees were not working), the likely savings through increased productivity and an assessment of what people had actually learned.The evaluation ‘proved’ that the course was successful.  Then, one Friday afternoon, the depot became extremely busy and the stock- taking was not done. Next week chaos resulted as the computer systems failed to cope with out-of-date information. The result was that orders were not met and customers complained.  Why had this happened? The reason was that nobody had explained to the stock-taking employees that stock-taking was *important* on a Friday afternoon. They had simply assumed that it was something they did when they weren’t busy. The evaluation had been invalid. It hadn’t asked the question: ‘Do these people know *why* they are performing this task?’ The evaluation had failed to spot a vital missing training objective.  *Source:* Adapted from Reay, 1994 |

|  |  |
| --- | --- |
| **Activity 7.4** |  |
| Using the summary of evaluation types in Table 7.1, suggest which evaluation approaches were applied in Case Study 7.2. Are there any additional ones that you think *should* have been applied?  *Suggested answers are provided at the end of the chapter.* | |

***Reliability***

Recalling Oppenheim (1992), for a research instrument to be reliable, it must be consistent. So to prove the reliability of an evaluation tool, we could attempt to confirm its findings by looking at other data sources. For example, say a study found that a once popular course was now receiving quite negative evaluations.

It might be prudent to look at documentation on the kinds of participants coming on the programme – they might be more experienced or senior than pre- vious participants and not find the course of particular value or sufficiently demanding. Reliability can also be measured by giving the data to another trainer or evaluator to see if they reach similar conclusions (inter-judge reliability).

Essentially, as Patton (1990) advises, a trade-off exists between the size and significance of a programme and the amount of evaluation error that can be tol- erated. In the case of a summative evaluation of, say, a major national education programme, involving large amounts of expenditure, we would want to see a robust evaluation involving reliable instruments (or at least as reliable as possible) using a large sample. In contrast, a small-scale training programme involving few people might only require a relatively informal, formative evaluation to highlight areas for improvement, reliability not being a major point of concern.

***Objectivity***

Concern for objectivity may be particularly strong from evaluators who believe in forms of ‘scientific’ or experimental evaluation and an emphasis on measure- ment, manipulation of variables, quantifiable outputs and distance (physical and critical) from what is being observed. But, as Patton dryly comments: ‘Distance does not guarantee objectivity; it merely guarantees distance’ (1990: 480). This issue, according to Patton, is not one of objectivity as such, but is about the cred- ibility of the evaluator and the extent to which fairness and balance are addressed. This may mean abandoning any positivist notion that there is one objective ‘truth’ out there, and instead focusing on people’s multiple perspectives and interpreta- tions of events.

Certainly, there are dangers when those designing and delivering a pro- gramme are also those who conduct the evaluations. There may be a sense of ownership that might be difficult to overcome. Either evaluators must be aware of the danger of subjectivity and try to address it, or they could bring in exter- nal consultants to conduct the evaluation. Of course, even when all the issues of validity, reliability and objectivity have been addressed, we may end up with the ‘so what?’ conclusion. If evaluation results tell us that 82 per cent of respondents scored a programme as either ‘excellent’ or ‘good’ what does this really tell us? Probably not very much. As Patton (1984) suggests, the outcomes of evalua- tion have to be compared with something else for them to have any meaning, such as:

* The outcomes of similar programmes.
* The outcomes of the same programme delivered on a previous occasion.
* The outcomes of model programmes in the same field.
* The stated goals of the programme.
* External standards developed by professional bodies.

Hence, evaluation should be seen less as a ‘snapshot’, than a measurement of indicators over time.

**PLANNING THE EVALUATION REPORT**

Evaluation reports may have a multiplicity of potential audiences with quite different needs. Funding agencies, steering groups and managers may be interested in technical issues arising from evaluation, not least because some of these may require action. This does not mean that they need all of the report – they may prefer an executive summary – but they will expect that the technical detail is available should they need it. Programme clients may not require so much tech- nical detail but will want to know the evaluation’s findings and its impact on themselves personally. Morris et al. (1987) present a summary (Figure 7.7) of the kinds of communication methods that can be used to report evaluation findings to different groups.

Clearly, some of the formats suggested in Figure 7.7 require the production of quite formal and large-scale documents. If effective action is to result from these reports, it is important that they are properly structured, a typical example being a table of contents, an executive summary, the main body of the report and appen- dices. Campbell (1997) suggests the following outline, described in Figure 7.8.

Remember, you will have to write clearly and concisely for your intended audience (see Chapter 14). Make as much use of figures and tables as is feasible, as these provide accessible summaries of the data and serve to break up the text. Planning the evaluation report may include allowing time for the review (evalu- ation!) of the report by a colleague or a helpful member of the intended audi- ence, so that errors, inconsistencies and misunderstandings can be eliminated.

**ENHANCING THE IMPACT OF EVALUATION**

Having completed an evaluation, how can you ensure that its findings lead to change or improvements? As Patton (1984) points out:

The challenge in evaluation is getting the best possible information to the people who need it – and then *getting those people to use the information in decision-making.* (Patton, 1984: 39–40; emphasis in original)

This may not always be easy. Evaluations may be ‘ritualistic’, conducted so that an agency can delay having to make a decision on a difficult subject (Weiss, 1984). One, obvious, approach is to ensure that the evaluation report is of high quality and worth reading and acting on. For example, make sure that conclusions and recom- mendations actually fit the data and are compatible with the objectives of the eval- uation study. Campbell (1997) also strongly recommends the production of action plans, providing precise details of remedial measures required and their timing.

A key factor here is making sure that these findings do not come as a shock to the programme or evaluation sponsors. People do not like surprises, particularly when money and resources have been invested in a policy, system or programme. A number of steps can be taken to improve the probability of an evaluation being accepted.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Possible communication form** | Technical report | Executive summary | Technical/professional paper | Popular article | News release/press conference | Public meeting | Media appearance | Staff workshop | Brochure/poster | Memo | Personal discussions |
| **Audience/users** |  |  |  |  |  |  |  |  |  |  |  |
| Funding agencies |  |  |  |  |  |  |  |  |  |  |  |
| Programme administrators |  |  |  |  |  |  |  |  |  |  |  |
| Board members, trustees |  |  |  |  |  |  |  |  |  |  |  |
| Advisory committees |  |  |  |  |  |  |  |  |  |  |  |
| Political bodies |  |  |  |  |  |  |  |  |  |  |  |
| Community groups |  |  |  |  |  |  |  |  |  |  |  |
| Current clients |  |  |  |  |  |  |  |  |  |  |  |
| Potential clients |  |  |  |  |  |  |  |  |  |  |  |
| Programme providers |  |  |  |  |  |  |  |  |  |  |  |
| Media |  |  |  |  |  |  |  |  |  |  |  |

**FIGURE 7.7** COMMUNICATION METHODS FOR A VARIETY OF AUDIENCES (ADAPTED FROM MORRIS ET AL., 1987)

* Involve sponsors in formulating the objectives and the design of the evaluation to gain their interest and commitment.
* Get commitment from senior stakeholders in advance of the evaluation that action will be taken on the basis of results.
* Consider establishing a steering group to monitor and help the evaluation project and get senior stakeholders onto the group if possible to increase its credibility.

|  |
| --- |
| **Cover page**  Typically includes a fully explanatory report title, specifies when the evaluation was conducted, when the report was prepared and who it was submitted to. It may also identify those who prepared it, reviewed and approved the report  **Table of contents**  Lists all headings in the report, especially the evaluation objectives and attachments/appendices, by page number  **Acknowledgements**  Identifies colleagues' professional contributions and provides an expression of thanks. When appropriate, the source(s) of financial support is recognized  **Part 1 – Summary**  Sometimes called an Executive Summary – for those who are too busy to read the full report   * 1. Introduction – background information, etc.   2. Purpose of the evaluation   3. Objectives of the evaluation   4. Summary of the evaluation project      1. A brief presentation of evaluation procedures, including a summary statement on the collection as well as the analysis of information and data      2. The conclusion(s) drawn from the information and data      3. The recommendations made   **Part 2** – **Report body**   * 1. Evaluation objective 1      1. Description of evaluation activities – how the evaluation was conducted, development and validation of the instrument(s), collection of information and numerical data, etc.      2. Responses, including tables and figures      3. Analysis and interpretation of the information and data      4. Conclusion(s) formed and recommendation(s) made for the objective   2. Evaluation of objective 2      1. Etc.      2. Etc.      3. Etc.   3. Plan for corrective action   **Part 3 - Appendices**   * 1. Instrument(s) used in the evaluation, i.e., reaction form, questionnaires, etc.   2. Presentation of raw data (if too bulky for main report) |

**FIGURE 7.8** FORMAT FOR AN EVALUATION REPORT (ADAPTED FROM CAMPBELL, 1997)

* Keep sponsors informed of outputs (particularly unexpected ones) as they occur.

Consider producing several reports, one for each type of audience. Senior managers, as we have seen, may not have either the time or the inclination to read complete reports and may prefer an executive summary. But take care to ensure that different versions contain similar content and recommendations – the differ- ence should be one of presentation. Ensure that not only managers receive the report but all other relevant stakeholders.

**THE ETHICS OF EVALUATION**

Ballantine et al. (2000) provide a framework of considerations to be taken into account in any attempt to mount an ethical approach to evaluation. Referring to the work of Habermas (1972), they warn that society is becoming less aware of ethical choices because these are being rationalized as either technical or economic decisions. Science is being absorbed into this discourse and presented as politically neutral and theoretically objective. According to Habermas (1972), however, knowledge always serves the vested interests of one group or another. Ballantine et al. (2000) therefore suggest five constraints (based on the work of Kettner, 1993) that can set the conditions for a ‘truly moral dialogue’.These comprise:

* *The generality constraint:* participation in a discourse or discussion must be as wide as possible, and present the views of all affected interest groups.
* *The autonomous evaluation constraint:* participants must be allowed to introduce and challenge any assertions and any interests stated.
* *The role taking constraint:* participants must give equal weight to the interests of others alongside their own interests.
* *The power constraint:* a participant should not appeal to any hierarchical author- ity to legitimate their argument.
* *The transparency authority:* participants must openly declare their goals and intentions.

To illustrate these, Ballantine et al*.* (2000) present a real life example from the City of London that is summarized in Case Study 7.3.

|  |
| --- |
| **Case Study 7.3 Short supply of ethics at the Stock Exchange**  In the late 1980s and early 1990s, the London Stock Exchange invested £80 million in Taurus, a major new information systems project. The project failed and the system was never completed. Ballantine et al. (2000) suggest that this was due to a failure to engage in rational moral discourse (discussion) during its evaluation, design and development.  *(Continued)* |

|  |
| --- |
| The *generality constraint* was met during the project to the extent that there were a large variety of stakeholders (the Stock Exchange itself, its stockbroking member firms both large and small, company registrars and other financial institu- tions). One of the problems, however, was that these stakeholders held conflicting requirements. The *autonomous evaluation constraint* played a significant part in the demise of the project because the planning process was quite well developed before participants really began to challenge its rationale and make their own case. The design team were motivated by largely technical considerations and failed to ques- tion whether the project was actually worthwhile.  There is little evidence that the *role taking constraint* was adhered to because the more powerful stakeholders (institutional investors) paid little attention to the interests of smaller parties (for example, private investors and small stockbroking firms). Indeed, the inability of different stakeholders to take the views and interests of others seriously was one of the main reasons that led to the Taurus project’s col- lapse.The result was that rather than the creation of one seamless system, about 17 alternative systems were welded together.The *power constraint* was not met because, although the chief executive of the Stock Exchange had wanted to stop the pro- ject, it had already gained too much momentum and support from the inter- national banks. Finally, in terms of the *transparency authority*, it is clear that not all participants’ objectives were made explicit from the start.  Ballantine et al. caution that if the managers and designers involved in the pro- ject had paid more attention to a moral discourse, then the political and ethical issues at stake might have been given more consideration. The result would have been either a project that was more in line with what stakeholders wanted, or the project would have been suspended long before it was, and losses minimized.  *Source*: Adapted from Ballantine et al., 2000 |

|  |  |
| --- | --- |
| **Activity 7.5** |  |
| Taking the information provided in Case Study 7.3, and using Ballantine et al.’s five constraints, describe a ‘truly moral’ and ethical process of collaboration and dialogue that could, in principle, have led to a more positive outcome. | |

Using some of the principles outlined in the discussion of constraints, above, Ballantine et al. (2000) have constructed a framework for the ethical eval- uation of a programme.While they focus this on information systems, it also offers a useful guide for evaluations of any kind (see Figure 7.9). They argue that there are six, general factors that influence the choice of evaluation approach: philoso- phy, power, culture, management style and the kind of evaluator and resources available (see left column in Figure 7.9). As we saw earlier, different schools of evaluation (and therefore philosophical approaches) have a direct bearing on what is evaluated, the purpose of evaluation and the tools used.

So, in Figure 7.9, the left hand side of each of the ranges represents a more expert and controlling approach to evaluation, while the right hand side emphasizes

|  |  |  |  |
| --- | --- | --- | --- |
| **Ethical attributes**  **Evaluation influences** | **Purpose of evaluation** | **Process of evaluation** | **People affected by the evaluation** |
| Philosophy | Summative Formative | Positivist Interpretivist | Automata Human |
| Culture | Control Learning | Ritualistic Purposeful | Organiza- Individual tional |
| Management style | Covert Overt | Implicit Explicit | Directive Consensual |
| Power | Manipulative Emancipate | Autocratic Democratic | Dictatorial Participative |
| Evaluator | Judgemental Assist | Investigative Collaborative | Control Facilitate |
| Resources | Minimalist Comprehen-  sive | Limited Sufficient | Constrain Enable |

**FIGURE 7.9** A FRAMEWORK FOR ETHICAL EVALUATION (BALLANTINE ET AL., 2000)

participation and learning.The framework can be used to consider the amount of thought given to ethics by each of the evaluation approaches. According to Ballantine et al. (2000), the more ethical approaches are to be found at the right end of each of the ranges, because more consideration is given to the views of

those on the receiving end of the evaluation process. But the authors acknowledge that there may be organizational circumstances when priorities other than ethical factors may be uppermost.

The ethical framework can be used to provide guidance on how ethics can be incorporated into the decision making process. It can also be used as a check on internal consistency, to see whether ethical approaches are consistent across all six influences.

|  |
| --- |
| **SUMMARY**   * Evaluation involves the systematic collection of data about the characteristics of a programme, product, policy or service. * The focus of evaluation can be on trainees’ reactions to a programme, how much new knowledge they have gained, how much this is transferred into better job performance and other organizational criteria. * Like most approaches to research, evaluation involves different schools or per- spectives, ranging from experimental and quasi-experimental with an emphasis on the measurement of outcomes and quantifiable data, to illuminative perspectives with a focus on processes and the multiple perspectives of participants. * Data can be collected from various informants and through observations, involving a wider range of stakeholders than just participants. * Data collection tools include questionnaires, assessment tests (since an important outcome of evaluation is a measurement of what participants have actually learned), learning logs and documentation of critical incidents. * The principles of validity, reliability and objectivity apply as much to evaluation as they do to many other aspects of research. * The impact of evaluation is enhanced if stakeholders are kept informed of outcomes as they arise – particularly if they are going to be unwelcome or unexpected. Care should be taken to avoid redundancy of information, providing different stakeholders with different versions of evaluation reports on the basis of what they need to know. * Evaluation that fails to take into account ethical issues will often be doomed to fail- ure. Ethical approaches include a focus on the individual needs of people rather than the goals of organizations, on making the purpose of the evaluation transparent to those being evaluated, and encouraging participation in the evaluation process. |

**Further reading**

Patton, M.Q. (1990). *Qualitative Evaluation and Research Methods*, 2nd edn. Newbury Park, CA: Sage. Still one of the best books on qualitative methods, with a substantial section on models of evaluation.

*(Continued)*

Morris, L.L., Fitz-Gibbon, C.T. and Freeman, M.E. (1987) *How to Communicate Evaluation Findings.* Newbury Park, CA: Sage. No evaluation study is worth the effort if the results cannot be effectively communicated to others. This book provides practical advice on how.

Clarke, A. (1999) *Evaluation Research: An Introduction to Principles, Methods and Practice.* London: Sage. Deals with a range of evaluation paradigms, and data collection methods and provides some case studies of evaluation in the education, health care and criminal justice systems.

|  |  |
| --- | --- |
| **Suggested answers for Activity 7.1 (selected examples)** |  |
| ***Focus or type of Type of data collected Ease or difficulty of evaluation measurement***  Accreditation Market research data Usually a significant (validation) (is the programme quantity of data have to  needed?); course be collected. Evaluators structure and content; (validation panels) will module descriptions look for accuracy and and objectives; links to coherence of data other courses;  resources supplied (including staff and their qualifications), etc.  Compliance Case studies of Data may be hidden by  breaches of regulations; those organizations performance indicators seeking to escape for compliance – e.g. compliance. Costs of speed of performance, data collection may  customer satisfaction inhibit the setting up of rates, etc. robust systems, but in  some cases systems may be required by legislation  Formative evaluation Participant evaluation How honest are the  forms; tutor observation participants? How and self-reflection self-reflective are  tutors? Are a sufficient number of indicators used?  Quality assurance Minutes of meetings; The data may not be  evaluation of accuracy particularly complex, but and completeness the quality assurance  of staff and student exercise may demand handbooks; student large quantities! evaluations; resources  etc. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 7.4** |  |
| The main evaluation approach seems to have been confined to a cost– benefit analysis. Perhaps a more prudent approach would have been to evaluate the outcomes, goals or the effectiveness of the programme. A descriptive focus might also have illuminated what was actually happening to participants when taking the course. | |

**Data Collection Methods**

**PART C**

**Collecting Primary Data: Questionnaires**

**8**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Plan and design valid and reliable questionnaires.**
* **Describe the processes involved in collecting primary data, including piloting.**
* **Demonstrate the skills for writing appropriate individual questions and designing questionnaires.**
* **Write appropriate documentation to accompany questionnaires.**

As an important data gathering tool, questionnaires are used as part of many of the research methodologies described in Part B of this book. Indeed, it is difficult to imagine a large-scale survey (Chapter 5), for example, without the use of a carefully constructed questionnaire. Similarly, case studies (Chapter 6) can use a combination of data gathering tools, with the use of questionnaires, sometimes in the form of an interview schedule (see Chapter 9).

Questionnaires are research tools through which people are asked to respond to the same set of questions in a predetermined order. Since question- naires are one of the most widely used primary data gathering techniques, con- siderable space will be devoted here to their design and construction. Many people in the business and educational worlds have had experience in data gath- ering using questionnaires, but fewer are knowledgeable about how difficult it is to construct questionnaires that are valid, reliable and objective. It is thus relatively easy to produce reports and recommendations based upon the most spurious of data. Hopefully, after reading this chapter you will understand many of the pitfalls of questionnaire design so that you can avoid them.

Questionnaires should be used when they fit the objectives of the research. Hence, in a case study that involves seeking the in-depth opinions and perspec- tives of a small number of respondents, a highly structured questionnaire might be completely inappropriate. Here you might want to construct an interview schedule

containing open-ended questions, adopting a descriptive approach. But where the audience is relatively large, and where standardized questions are needed, the questionnaire is ideal, and will allow, if this is required, an analytical approach exploring relationships between variables. Of course, in many cases questionnaires will be only one tool used in the general research effort.The research design may plan for a wide-scale survey using questionnaires, to be followed up by in-depth structured interviews or observations with a target sample, identified to be of interest by the survey.

In this chapter we will explore some of the essential principles in question- naire design including how to write appropriate questions, whether to use open or closed questions, how to sequence questions and questionnaire layout.We also look at some of the more specific principles behind designing Web or Internet ques- tionnaires, and how questionnaires of any kind should be administered.

**WHY QUESTIONNAIRES?**

Questionnaires are perhaps one of the most popular data gathering tools, proba- bly because they are thought by many researchers to be easy to design.This belief, as we shall see, is not necessarily supported by the evidence. As Gillham (2000) points out, the popularity of questionnaires is also probably based on some of their inherent advantages. For example:

* They are low cost in terms of both time and money. In contrast to, say, inter- views, questionnaires can be sent to hundreds or even thousands of respon- dents at relatively little cost.
* The inflow of data is quick and from many people.
* Respondents can complete the questionnaire at a time and place that suits them. Contrast this with interviews, when it can be difficult to find conve- nient times to meet the respondent.
* Data analysis of closed questions is relatively simple, and questions can be coded quickly.
* Respondents’ anonymity can be assured. But Gillham (2000) rightly notes that in small-scale surveys, this can be largely nominal in character – it may not be difficult for the researcher to recognize the responses of individuals. But real anonymity can also be double-edged. If you do not know who has not responded, to whom do you send reminders?
* These is a lack of interviewer bias.There is evidence that different interviewers get different answers – because of the way in which they place different emphasis on individual words in questions and because of the different probes (additional questions) that they follow up with.

Of course, not surprisingly, using questionnaires also has its drawbacks. Unless we can make completing the questionnaire intrinsically rewarding, the response rate can be depressingly low.This is even more of a danger if questionnaires are too long. Gillham (2000) advises that questionnaires should be limited in length to four to

six pages, otherwise the return rate may be adversely affected. Few people greet receiving a questionnaire with unbounded enthusiasm, particularly long ones. Most people find verbal communication easier than using the written word, yet question- naires demand a certain level of literacy. But there is no opportunity to ask questions or clear up ambiguous or ill-conceived answers. Respondents may give flippant, inac- curate or misleading answers, but the researcher is not in a position to detect this. In contrast, the face-to-face interview might reveal underlying problems through observing body language or the verbal tones of the respondent.

|  |  |
| --- | --- |
| **Activity 8.1** |  |
| Take a questionnaire that you have designed, preferably quite recently. Was it less than six sides in length? Was it well designed and easy for respondents to complete? Were the answers, in your view, honestly given? Overall, how successful was the questionnaire in eliciting the required data and how could you explain its success or failure? | |

**DESIGNING QUESTIONNAIRES**

Questionnaires reflect the designer’s view of the world, no matter how objective a researcher tries to be.This is true not only for the design of individual questions, but often about the very choice of research subject. Furthermore, what we choose *not* to ask about, may just as easily reflect our world view as what we include in the questionnaire. It is important, then, that, as a researcher, you are aware of this and try, as far as possible, to be objective. Indeed, it is the values, perceptions and interests of the respondent that you should be attempting to capture, and the questionnaire should reflect this as much as possible. In this section, we will look at the design of individual questions, including open and closed questions, the sequencing of questions and questionnaire layout.

***Writing individual questions***

Piloting a questionnaire usually helps to eliminate or at least reduce questions that are likely to mislead. But it needs to be understood that people may read and interpret questions in quite distinct ways. It is naïve to believe that standardized questions will always receive standardized, rational, responses. Nevertheless, it helps if questions are phrased in ways that are clear, concise and unambiguous (to everyone in the sample), and free from jargon and abbreviations.While the over- all content, style and structure of the questionnaire must satisfy the respondent, each individual question must stand on its own merits. Arksey and Knight (1999) provide a useful list of what to avoid when constructing individual questions.

**Prejudicial language** Try to avoid language that is prejudicial or contains sexist, disablist or racist stereotyping. A question that annoys, irritates or insults a respondent may affect the way they respond to questions that follow – if they decide to complete them at all! For example, the question: ‘What is your marital status?’ may annoy those who live with partners or who are not living in a heterosexual relationship (assuming that the society allows only heterosexual marriages).

**Imprecision** Avoid vague phrases such as ‘average’, ‘regularly’ and ‘a great deal’ since they are likely to be interpreted in different ways by different respondents.

**Leading questions** These suggest a possible answer and hence promote bias. Questions such as ‘Why do you think the organization has been successful in the past three years’ are leading because they are making an assumption with which the respondent may not necessarily agree.

**Double questions** These should be avoided because they are impossible to answer. For example, if the question: ‘Do you like chocolate and strawberry ice- cream?’ receives a reply of ‘Yes’ you would be unclear as to whether this relates to both of the ice-cream flavours or just one of them.

**Assumptive questions** Avoid questions that make assumptions about people’s beliefs or behaviours. For example, ‘How often do you drink alcohol?’ makes an assumption about the respondent’s drinking habits which may be entirely false (and even hurtful – see prejudicial language, above).

**Hypothetical questions** Try to avoid hypothetical questions such as: ‘Suppose you were asked to …’ since these have been shown to be poor predictors of peo- ple’s actual subsequent behaviour. A useful check on whether the content and structure of a question is right is to ask whether a respondent would understand why the question was being asked within the overall context of the study. Arksey and Knight (1999) also argue that such questions can generate insightful data when people have some direct knowledge or experience of the subject being discussed.

**Knowledge** Make sure that the group that has been targeted to answer the ques- tions has the knowledge actually to do so. Sometimes it may be necessary to pro- vide people with some background information if the subject is quite technical.

**Memory recall** People may have difficulty recalling what has occurred even quite recently. If, say, you are constructing some questions around recent news- worthy events, then it would be appropriate to present respondents with a list of such events before asking them questions about them.

In determining how to ask individual questions consider the following:

* Can the question be misunderstood? Does it contain difficult or unclear phraseology?
* Is the question misleading because of unstated assumptions or unseen implications?
* Is the wording biased? Is it emotionally loaded or slanted towards a particular kind of answer?
* Is the question wording likely to be objectionable to the respondent in any way?
* Can the question be asked in a more direct or a more indirect form?
* Are double questions avoided?
* Are leading questions avoided?
* Is attention paid to detail – e.g. overlapping categories such as ‘age 30–35, 35–40’
* Do questions avoid taxing respondents’ memories?
* Can the questions be shortened?
* Are categories such as ‘Don’t Know’ and ‘Not Applicable’ provided?
* Will the words used have the same meaning for all respondents, regardless of nationality, language, culture, etc.?
* Is the frame of reference clear – e.g. if asking how often, is the range of pos- sible responses made obvious?
* Do questions artificially create opinions on subjects where respondents really do not have any?
* Is personal wording preferable (e.g. ‘How do *you* feel?), or impersonal (e.g. ‘How do you think people feel’). The first is a measure of attitudes, the second a measure of respondents’ perceptions of other people’s attitudes.

***Classification questions***

One type of question often required by a survey is the *classification* question, deal- ing with, for example, the name, sex, age, status, etc. of the respondent. These are important for providing the basis for analysing associations between variables (for example, a respondent’s gender and attitude towards sexual harassment issues in the workplace).These questions should be introduced by a gentle ‘It will help us in further analysis if you would tell us a little about yourself ’.Take care not to run the risk of alienating the respondent by prying for information that is not, subse- quently, needed. For example, is it necessary to know the respondent’s exact age, or would a response within a range of ages suffice? People may also be reluctant to reveal details of their salary, particularly to a stranger within their own organi- zation. It may be easier to obtain their response to a question on job grade that may provide an indirect indication of salary.

Evaluate the questions in the short questionnaire shown in Figure 8.1.

*Suggested answers are provided at the end of the chapter*.

**Activity 8.2 Anyone can write a questionnaire?**

* 1. State your age

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Under 20 20–25 25–30 Over 30

* 1. What are your views on appraisal?
  2. Do you consider appraisal to be vital for organizational development or a way of wasting time?
  3. Do you consider that appraisal should be:
     + Integrated with training plans so people are better trained?
     + Linked to the reward system so everyone earns more money?

Yes No

1

2 Please tick one

* 1. Without effective ‘best practice’ appraisal the organization cannot prosper

Yes No

* 1. Give details on the number of appraisals conducted within the organization over the recent time period.
  2. How many of your appraisals have you failed?
  3. How often do you think that people should be appraised: (a) once a year (as now);

(b) twice a year; (c) once every two years; (d) never (the scheme should be abandoned); (e) other (please specify)

Name: Department: Salary:

**Complete and return**

**FIGURE 8.1** EXAMPLE QUESTIONNAIRE

***Question content***

Clearly, in writing questions issues such as validity need to be borne in mind. Hence, the content of the questionnaire needs to cover the research issues that

have been specified. But Foddy (1993) points out that this is by no means a simple matter. A series of precise steps must be followed:

* The researcher has to be clear about the information required and encode this accurately into a question.
* The respondent must interpret the question in a way that the researcher intended.
* The respondent must construct an answer that contains information that the researcher has requested.
* The researcher must interpret the answer as the respondent had intended it to be interpreted.

Unfortunately, as Foddy (1993) comments, there is ample opportunity for the process to break down at any stage, with resulting threats to validity. Even if the respondent understands the question, there also needs to be some confidence that he or she will know the answer, and that they will be willing to provide it. In deliberating about question content ask yourself the following questions:

* Is the question necessary? Just how will it be useful?
* Are several questions needed on the subject matter of this question?
* Do respondents have the information necessary to answer the question?
* Does the question need to be more concrete, specific and closely related to the respondent’s personal experience?
* Is the question content sufficiently general and free from spurious concrete- ness and specificity?
* Is the question content biased and loaded in one direction, without accom- panying questions to balance the emphasis?
* Will the respondents give the information that is asked for?

Cannell (1985) deals with the issue of how to ask difficult or embarrassing ques- tions. Referring to the work of Barton, he illustrates a number of ways in which the cooperation of respondents can be maintained. The possible approaches are illus- trated in Table 8.1, in which, by means of illustration, a set of hypothetical questions are asked about whether a respondent sabotaged the organization’s intranet.

***Drafting the answer***

Decide on how you want people to respond and stick with it. So, if you require respondents to *tick* their responses, get them to do this throughout the question- naire, rather than to also incorporate *underlining* and *circling*. In general, people seem to be used to box-ticking. The golden rule is that it should be absolutely clear how the respondent is to complete the questionnaire.

***Types of question***

With the above warnings in mind, we can now move on to look at the types of questions that can be posed in a questionnaire. Oppenheim (1992) suggests that a

**TABLE 8.1** APPROACHES TO ASKING THE EMBARRASSING QUESTION: ‘DID YOU SABOTAGE THE INTRANET?’

**Approach Question**

Casual approach Do you happen to have sabotaged the intranet?

Give a numbered card Would you please read off the number on this card which

corresponds to what became of the intranet [*Hand card to respondent*]:

1. It went down of its own accord (as usual)
2. I hacked into it and programmed a bug to make it self-destruct
3. Other (what?)

The Everybody approach As you know, many people are tempted to sabotage the

intranet these days. Do you happen to have done it recently?

The Other People approach (a) Do you know any people who have sabotaged the intranet?

(b) How about yourself?

Sealed Ballot technique We respect your right to anonymity. Please complete this

form, indicating whether, or not, you sabotaged the intranet, seal it in the envelope and place it in the box marked ‘Secret Ballot’

*Source*: Adapted from Cannell, 1985

*funnel* approach can often be used, whereby the questionnaire starts off with a broad set of questions and then progressively narrows down the questions to target specific areas. This is sometimes achieved by *filter* questions that are designed to exclude some respondents. So, for example, in a survey of employee commuting experiences, a question might be posed: Have you ever had difficulty in getting to work? If the answer is ‘Yes’, then more market research questions follow; if the answer is ‘No’ then the respondent is routed to a later part of the questionnaire on different transport issues. The main body of the questionnaire, however, will comprise either open or closed questions. It should be noted that different for- mats can be used for questions. Cannell (1985) argues that using a variety of such formats adds interest and can even help increase questionnaire response rates. Let us look at some now.

**Open questions**

Open questions have no definitive response and contain answers that are recorded in full. Hence, the questionnaire must be designed in such a way that respondents are able to provide such a response without the restriction of lack of space. Open questions often begin with words such as ‘How’, ‘Why’, ‘What’, etc.

The advantage of open questions is the potential for richness of responses, some of which may not have been anticipated by the researchers. But the down- side of open questions is that while they are easy to answer they are also difficult

to analyse. At first sight much of the information gathered may seem varied and difficult to categorize. Generally, the solution to this is the use of *coding* and the adoption of a *coding frame*.

Open questions may lead to interesting or unexpected responses, so as we saw in Chapter 5, follow-up questions called probes or *probing questions* can be used (if the questionnaire is administered by an interviewer).These probes should be general in nature, and should not try to lead the respondent – for example, ‘Could you say a little more about that accident report’; ‘How do you feel about those new operational procedures’. Probing questions can also be used to add some clarity where the interviewer has not understood a response. Clearly, it is easier to ask probing questions when conducting a structured interview than when using a postal questionnaire.

The simplest form of open question is the specified response, as illustrated in Question 1.

|  |  |
| --- | --- |
| **Question 1 Specified response question** |  |
| What aspects of the government’s healthy living campaign do you find the  *most* useful? Please write in.  What aspects of the government’s healthy living campaign do you find the  *least* useful? Please write in. (You could follow up each response with a ‘Why?’ question.) | |

**Closed questions**

A closed question is one to which the respondent is offered a set of pre-designed replies such as ‘Yes/No’,‘True or False’, multiple-choice responses, or is given the opportunity to choose from a selection of numbers representing strength of feel- ing or attitude. In contrast to open questions, closed questions may restrict the richness of alternative responses, but are easier to analyse.They also make it easier to compare the views of one group with another. Closed questions can be useful in providing respondents with some structure to their answers.There are a number of approaches to asking closed questions.

**List questions** These provide the respondent with a list of responses, any of which they can select.This approach avoids making the answering of a question- naire a test of memory. If list questions are being presented as part of a structured interview, then prompt cards can be used, which list responses and which are shown to respondents. So, rather than read out Question 2 and rely on respon- dents to remember each item accurately, a card is given to them that reproduces the question and the possible responses.

|  |  |
| --- | --- |
| **Question 2 List question** |  |
| What do you think is the most important influence on the success of the organization in the next two years? Please ✓ as many responses as you think accurate.  Changes in government policy affecting the legal regulation of the market □  The entry of new competitors to the market □  The impact of the company’s current  reorganization strategy □  Foreign exchange rates □ | |

While the list will, clearly, influence the direction of people’s responses, this does not make the approach invalid. If the questionnaire is concerned with issues that require recall of information, the list might act as a useful memory-jogger. But it must be recognized that influencing respondents in this way may affect their response to any later open questions.

**Category questions** These are designed so that only *one* response is possible. For structured interviews there can be any number of categories, provided a prompt card is used. But for self-administered questionnaires and telephone questionnaires Fink (1995c) suggests a maximum of no more than five alternative responses (see Question 3).

|  |  |
| --- | --- |
| **Question 3 Category question** |  |
| How often in an average week do you use our e-banking facilities? Please   * one response.   Never □  Once □  2–3 times □  4–5 times □  6 times or more □ | |

**Ranking questions** This requires the respondent to rank responses in order. With this kind of question it is important to make the instructions for complet- ing the question clear and explicit. Be aware that more than seven or eight items in the list may make it too complex for many respondents to complete. For face- to-face interviews use will have to be made of prompt cards and for telephone

interviews, items should be limited to no more than three or four. Note that an ‘other’ category is also provided to catch any features not mentioned in the list (see Question 4).

|  |  |
| --- | --- |
| **Question 4 Ranking question** |  |
| Please indicate in the boxes provided which features you believe are the most important when visiting our superstore (1 indicating the most impor- tant, 2 the next most important, etc.) Please leave blank those features that have no importance at all.  Ease of car parking □  Low prices □  Friendly staff □  Store loyalty card □  Variety of goods □  Other (please specify) □ | |

**Scale questions** Scale or rating questions are used to measure a variable, and comprise four types of scale: nominal, ordinal, interval and ratio. A common type is the Likert scale on which respondents are asked to indicate how strongly they agree or disagree with a series of statements (see Question 5).This is an example of an ordinal scale. Further details of all these scales are presented in Chapter 12. Most Likert scales use either a four- or five-point scale.

|  |  |  |  |
| --- | --- | --- | --- |
| Strongly | Agree | Disagree | Strongly |
| Agree |  |  | Disagree |

Other forms of scaling can also be used.The number of response categories, for example, can be changed. Common formats are ‘True/False’, ‘Yes/No’.

As a loyal electricity customer we would like to know your views on the

service we provide. Please put one ✓ for each of the following statements

I have been pleased with the □

emergency 24-hour call out service

□

□

□

Electricity prices have been

competitive with gas prices

□

□

□

□

**Question 5 Scale question (ordinal)**

Another approach would be to get respondents to mark a point on a continuum. Question 6 seeks responses on the quality of helpline support. Czaja and Blair (1996) warn, however, that this approach can lead to complexities at the data analysis stage. For example, do we calculate the average rating; combine parts of the scale into high, medium and low categories; or use a threshold that indicates a trend in one direction or another?

|  |  |
| --- | --- |
| **Question 6 Continuum scale** |  |
| Please circle one number that reflects your opinion of our helpline support  Quick 1 2 3 4 5 6 7 8 9 10 Slow  Friendly 1 2 3 4 5 6 7 8 9 10 Discourteous  Informative 1 2 3 4 5 6 7 8 9 10 Confusing | |

Oppenheim (1992) provides a useful table comparing the advantages and disadvantages of open and closed questions, reproduced in Table 8.2. Note that often a questionnaire will use a mixture of both open and closed questions. Indeed, it is often useful to follow up a closed question with an invitation to add comments.

**TABLE 8.2** THE ADVANTAGES AND DISADVANTAGES OF OPEN AND CLOSED QUESTIONS

**Advantages Disadvantages**

**Open questions**

Freedom and spontaneity of the answers Time-consuming

Opportunity to probe In interviews: costly of interviewer time Useful for testing hypotheses about ideas or Demand more effort from respondents

awareness

**Closed questions**

Require little time Loss of spontaneous response

No extended writing Bias in answer categories

Low cost Sometimes too crude

Easy to process May irritate respondents Make group comparison easy

Useful for testing specific hypotheses

*Source*: Adapted from Oppenheim, 1992

***Sequencing questions***

There should be a logical flow to the sequence of questions, just as you would expect in a formal written text. Such a flow will aid the respondent in understanding

Do you read the staff newsletter?

Yes No

Do you read it frequently?

Is this because it hasn’t been delivered to you?

No Yes No Yes

What factors encourage you

to read the newsletter?

Would you like it delivered?

What articles would encourage you to read it more?

**FIGURE 8.2** FLOWCHART FOR PLANNING OF QUESTION SEQUENCES

individual questions and the overall purpose of the questionnaire. One way of designing the flow of questions is to use a flowchart, as shown in Figure 8.2.

Oppenheim (1992) points out that after reading the accompanying docu- mentation that tells them all about the survey, respondents may be quite eager to answer some of the questions.Therefore, the last sort of question they want to see is what is presented in many surveys – a list of personal questions about age, gender, rank, status (work and marital, etc).These types of questions should be kept to nearer the end of the questionnaire, and should be preceded by a short statement explain- ing that this data is needed for making statistical comparisons, so the respondent’s help would be appreciated. De Vaus (2002) argues that questions that should come first include those that are easily answered, factual questions and those that are obvi- ously key to the purposes of the survey. Indeed, as Dillman (2000) points out, if the covering documentation has highlighted the key themes of the questionnaire, it is sensible to start with questions that deal directly with the theme. He also suggests that special attention be given to the first question since this will help determine whether the questionnaire is answered or put in the wastepaper bin.

Other useful advice includes going from easy to more difficult questions and from more concrete to abstract. Any sensitive questions should be left until the end.Where possible, a variety of answering formats should be used to provide interest, some additional advice on the sequencing of questions being:

* Is the answer to the question likely to be influenced by the content of preceding questions?
* Is the question led up to in a natural way? Is it in correct psychological order?
* Does the question come too early or too late from the point of view of arous- ing interest and receiving sufficient attention, avoiding resistance, etc?

|  |  |
| --- | --- |
| **Activity 8.3** |  |
| Take a questionnaire that has been designed either by yourself or a colleague (it could be the one you used for Activity 8.1). Evaluate individual questions. Are they clear, concise and unambiguous? Would the intended audience be able to answer them? Are instructions on answering the questions clear? Is the sequencing of questions appropriate? | |

***Providing response categories***

Asking a question like ‘What employment sector did you work in before your present job?’ is asking for trouble. It might both confuse the respondent (‘What do they mean – sector?’) or the respondent might be uncertain as to whether their classification is acceptable. So, for the question cited, it would be appropriate to provide a list of categories such as: Finance, Retailing, Education, Commerce, Agriculture, Other (please specify), etc. Providing these categories also yields a standardized set of responses that will make the data easier to analyse. Note that we have been careful to provide an ‘Other’ category, just in case. Some common response category statements are provided by Czaja and Blair (1996) and are sum- marized in Table 8.3.

**TABLE 8.3** COMMON RESPONSE CATEGORY QUANTIFIERS

**Category Quantifiers**

Opinions Very satisfied/Somewhat satisfied/Somewhat dissatisfied/Very dissatisfied

Very important/Somewhat important/Not too important/Not at all important

Oppose/Support

Knowledge Very familiar/Somewhat familiar/Not too familiar/Not at all familiar

True/False

Frequency of events Always/Frequently/Seldom/Never or behaviour Often/Sometimes/Rarely/Never

Per day/Per week/Per month/Per year/Never

Ratings Excellent/Good/Fair/Poor

Got better/Got worse/Stayed the same Very fair/Fair/Unfair/Very unfair High/Medium/Low

*Source:* Adapted from Czaja and Blair, 1996

***Questionnaire layout***

One way of improving the rate of response to a questionnaire is by making it as attractive as possible. Hence, factors such as the general layout, choice of paper,

line spacing and answering directions should be considered. So, the way of answering multiple-choice questions should be consistent throughout – for example, ticking boxes or circling numbers. Boxes or lines should be provided for open question responses. It is best to avoid making the questionnaire too cramped as this can be off-putting to respondents.

Dillman (2000) warns against unconventional designs, such as printing on both sides of paper with a staple to bind the pages together, or using landscape (hor- izontal) orientation. He argues strongly for a booklet format which, he says, is understood automatically by respondents.With this format, people start on page 1 and turn over to page 2 which is to the left of page 3. If the budget is tight, then it is legitimate to print on one side only and to staple sheets together. Carroll (1994) suggests that other typographical issues require careful consideration such as:

* Putting boxes around groups of questions.
* Shading multiple-choice questions.
* Selecting clean, clear typefaces.
* Using lines to take the respondent’s eye from question to response.
* Numbering all questions and sections.

***Instructions***

Most questionnaires will also contain, probably at the start, a set of instructions for completing them. This is important, and it should not be assumed that respon- dents will all know that they should, say, only tick one choice for each question. Unless instructions are made absolutely specific, it is almost certain that question- naires will be returned completed incorrectly resulting in a loss of data. Cohen and Manion (1997) even suggest that with postal questionnaires it is advisable to repeat the instructions. Carroll (1994) supports this idea, arguing that providing additional instructions for groups of questions will help the response rate.

One of the problems with instructions is that they are either not read or are misread. Dillman (2000) suggests that respondents can be helped by careful use of typography and design. De Vaus (2002) suggests that, to improve the flow of a questionnaire, the following instructions should be considered:

* General instructions, dealing with the purpose of the questionnaire, assurances of confidentiality, how and when to return the questionnaire.
* Section introductions when the questionnaire is divided into subsections.
* Question instructions (e.g. tick only one response).
* ‘Go to’ instructions.

Dillman (2000) refers to these ‘go to’ instructions as ‘skip instructions’ and argues that they are important because they avoid respondents reading or completing questions that do not apply to them. But in self-administered questionnaires the problem is getting people to *read* the skip instructions correctly. Figure 8.3 illus- trates a poorly constructed skip question and an improved version. Note that in the

|  |
| --- |
| ***A problem skip question***   1. **Do you use public transport to get to work?**    * Yes (Go to 13)    * No (Go to 18) 2. **How long does your journey take you (in minutes)**   ***An improved skip question***   1. **Do you use public transport to get to work?**    * No *..-* (Skip to 18)    * Yes 2. **How long does your journey take you (in minutes)** |

**FIGURE 8.3** USES OF TYPOGRAPHY AND EMPHASIS TO AID THE FUNCTIONALITY OF SKIP INSTRUCTIONS (ADAPTED FROM DILLMAN, 2000)

improved version, the ‘No’ response is presented first and respondents re-routed if necessary. Instructions are in bold and a pointed finger used for emphasis.

Similarly, the use of spacing can help to improve the understanding of a question, as illustrated in Figure 8.4. See how a quite densely packed question is laid out so that different elements are separated.

**DESIGNING INTERNET AND WEB-BASED QUESTIONNAIRES**

As we saw in Chapter 5, the advent of the Internet and World Wide Web has trans- formed the way in which many surveys are conducted. Given that many organi- zations, particularly larger ones, have good connections to the Internet, the use of online surveys is especially advantageous in terms of convenience and access to large samples and populations.

***E-mail questionnaires***

E-mail questionnaires (often used as part of surveys) are relatively easy to com- pose but offer fewer opportunities to provide visual stimulation or interactivity. It is difficult, for example, to use the kind of skip patterns discussed in the previous section. On the whole, the principles of e-mail questionnaire design are very

|  |
| --- |
| ***A problem question***   1. When you joined the company, what were your major ambitions (a) promotion; (b) job satisfaction; (c) a rise in salary; (d) learning a new skill; (e) all of these? Mark.   one answer.   1. How long have you now worked for the company? Years   ***An improved question***  O When you joined the company, what were your major ambitions? Mark one answer   * Promotion * Job satisfaction * A rise in salary * Learning a new skill * All of these   0 How long have you now worked for the company?  Years |

**FIGURE 8.4** THE USE OF SPACING TO HELP IDENTIFY GROUPS OF ELEMENTS

similar to many of those concerned with paper-based design. Dillman (2000) suggests the following strategies:

* Use multiple contacts (e.g. preliminary e-mail, questionnaire e-mail, ‘thank- you’ e-mail, etc.)
* Personalize all e-mail contacts, do not send them via a listserv. One reason for this is that a response would be sent to all others on the list – so much for confidentiality!
* Keep the covering (introductory) text brief, avoiding the need for the respon- dent to scroll down the page.
* Suggest alternative ways to respond, such as printing out the questionnaire and completing it by hand. Some respondents may feel insecure about e-mail responses, which can always be checked by an employer.
* Limit column width to 70 characters to decrease the likelihood of text wrap- ping around to the next line.
* Start with an easy but interesting question.
* Provide instructions on completing questions, such as putting an X inside the brackets.
* In the case of non-response, include a replacement questionnaire with the reminder message.

***Web-based questionnaires***

Web-based questionnaires offer many facilities for questionnaire design that are not available in traditional, paper-based formats, such as the use of drop-down menus, pop-up instruction boxes and sophisticated skip patterns. However, the very flexibility of the Web makes the opportunities for making design errors all the greater, which may, in turn, affect response rates. It is extremely easy to get ‘lost’ in a website, at which point many users exit the site quickly. Hence, follow- ing some simple design instructions is all the more important. Dillman (2000) makes a number of recommendations:

* Introduce the Web questionnaire with a welcome screen that is motivational, that emphasizes the ease of responding, and shows how to proceed.
* Provide a login to limit access to the site to the selected sample.
* Choose a first question that is easy and stimulating to answer.
* Present questions in a similar format to that used in a conventional questionnaire.
* Use colour appropriately and not just for the sake of it.
* Unless you are sure that all respondents have the same screen configuration, test the Web pages on different screen resolutions and Web browsers to ensure that the appearance is always the same.
* Use drop-down boxes sparingly and identify each with a ‘click here’ instruction.

All questionnaires, whether paper-based, e-mail or Web-based need careful pilot- ing before dissemination to a wider audience.

|  |  |
| --- | --- |
| **Activity 8.4 Evaluating Web-based questionnaires** |  |
| Take a look at the following website, which contains a wide variety of Web-based questionnaires:  <http://www.accesscable.net/~infopoll/Library.htm> Now find examples of:   * Accompanying documentation, including information letters. * Different question formats (open/closed; listing questions; category ques- tions; ranking questions; scale questions). * The use of skip questions. * Face sheet information. * The use of response category quantifiers.   Also take a look at Sample Web Questionnaires at: <http://www.surveysystem.com/websurveys.htm> | |

**PILOTING QUESTIONNAIRES**

Research instruments such as interview schedules can be modified if certain questions appear to be ineffective, but questionnaires, particularly if used for large surveys, are a ‘one-shot’ attempt at data gathering. It is therefore essential that they are accurate, unambiguous and simple to complete. As we saw in Chapter 5, that pilot- ing is vital. Judicious piloting will reduce the incidence of non-response to the questionnaire. Gillham (2000) suggests that it is wise to pilot at least 50 per cent more questions than you need so that confusing or unreliable questions can be thrown out at this stage.What else should be piloted? Well, basically, anything and everything! But you could consider the:

* Instructions given to respondents.
* Style and wording of any accompanying letter.
* Content of face-sheet data, that is, respondents’ names, addresses, etc.
* Formality or informality of the questionnaire in terms of tone, presentation, etc.
* Length of the questionnaire – if too long, is the response rate likely to be reduced?
* Sequence of questions.
* Quality of individual questions in terms of whether they are understood and answered in a way that was intended.
* Scales and question format used, for example, Likert scales,Yes/No responses, etc.

Oppenheim (1992) even suggests that the tables for the data analysis phase of the final report should be piloted (that is, dummy tables written) before the questionnaire is issued. This might highlight new issues or problems that could require consideration and inclusion in the questionnaire itself.

De Vaus (1986) suggests that evaluation is important in a number of design areas, including checking for:

* The ability of a question to discriminate. If everyone responds with the same answer to a question this is often not very useful, since one purpose of using a questionnaire is to examine the diversity of views on a subject.
* The validity and reliability of questions.
* Redundancy, so if it is found that two questions measure the same thing, one of them can be dropped.
* The response set.With some respondents, a pattern of answering Likert-type ques- tions quickly sets in. So, if they tick ‘Strongly agree’ for, say, the first three ques- tions, this response becomes habitual and they tick all remaining questions with this response.To avoid this happening, it is wise to alternate responses, for example, by using a negative statement on which the respondent will have to disagree.

Who can help you with piloting? Gillham (2000) advises trying out your initial list of questions with one or two people who are not part of the target group. Explain that you are trying to get the questions right, and that they should indicate where a question is unclear. Even sit with them as they look through the questions, noting their comments and your own observations on a spare

questionnaire. Once you have amended the questionnaire, re-trial it with another two or three people who are similar to, but not part of, the target group.The proce- dure is the same, but this time also ask for improvements, deletions and additions. You are now ready to start designing the layout of the questionnaire.

Of course, if the survey is delivered via the Web, in addition to the issues raised above a whole new set of problems have to be faced. As we saw earlier, the design of Web-based surveys offers both flexibility but also opportunities to get things spectacu- larly wrong. As in any software development, it is sensible to design and pilot a proto- type of the final site, so that user problems can be identified. Issues to look at here include the use of colour, on-screen instructions, navigational routes (especially for skip questions) and how respondents handle inputting their responses to questions (do they know what to do?). Observation at the piloting stage with respondents actually using the website questionnaire may also reveal some entirely unanticipated problems. Case Study 8.1 provides an example of how piloting can help to improve a questionnaire.

|  |
| --- |
| **Case Study 8.1 Questionnaire piloting to get it right**  A research project is set up to study public attitudes towards the decriminalization of certain categories of drugs.The study starts with the question:  *Would you say that most people think that certain ‘soft’ drugs should be decriminalized?*   1. Yes 2. No 3. Don’t know/not sure Piloting the questions reveals that:  * Most respondents cannot report in general what ‘most people’ think, they only know what they, personally, think. * Some people did not understand the concept ‘decriminalize’. * Some could not differentiate between ‘soft’ and ‘hard’ drugs. * Respondents resisted selecting between just ‘Yes’ and ‘No’ and wanted an opportunity to express their feelings between alternatives.   The question then was modified to read:  *Do you think that people arrested for the possession of drugs such as cannabis are sen- tenced fairly (a) almost always; (b) most of the time; (c) some of the time; (d) never?*  Piloting shows that this is an improvement because it asks people what they themselves think, and it is more specific about the type of drugs being discussed. It also provides a range of categories. Its disadvantage is that it has become too specific and shifted away from the central theme of the original question, decriminalization.  The third and final version becomes:  *Please indicate your view on each of the following statements:*  *Fining someone for possession of cannabis is*: *Very fair, Fair, Unfair, Very unfair. Imprisoning someone for possession of cannabis is*: *Very fair, Fair, Unfair, Very unfair. Fining someone for dealing in cannabis is*: *Very fair, Fair, Unfair, Very unfair.*  *Imprisoning someone for dealing in cannabis is*: *Very fair, Fair, Unfair, Very unfair.* |

|  |  |
| --- | --- |
| **Activity 8.5** |  |
| Take one or a small number of questions from a questionnaire you are designing and pilot them with a sample audience. Amend the questions on the basis of the responses and advice given. Pilot the amended questions. Amend them again. How similar is the third version of the questions to what you started with? | |

**MAINTAINING QUALITY: VALIDITY AND RELIABILITY**

Since questionnaires are one of the most popular instruments for data gathering, you will not be surprised that we pause yet again to discuss the issues of validity and reliability.

***Validity***

We saw earlier in this chapter that the validity of a questionnaire can be affected by the wording of the questions it contains. But even if individual questions are valid, a poor sequencing of questions or confusing structure or design of the ques- tionnaire can all threaten its validity.

The questionnaire must cover the research issues both in terms of content and detail. Recall Figure 4.6 in Chapter 4 which shows the dangers of a question- naire not covering the research area (Zone of Neglect) and some questions being asked that are irrelevant to the study (Zone of Invalidity). It should be noted that asking spurious, irrelevant questions increases the length of a questionnaire, which in turn, may reduce the number of responses. If the response rate becomes too low, this may limit the generalizability of the findings, and hence external validity.

As we saw in Chapter 5, two threats to the validity of postal questionnaires are the extent to which respondents complete the questionnaires accurately, and the problem of non-response. Accuracy can be checked by interviewing a sample of respondents, and probing for how carefully they have answered the question- naire. For non-response, again follow-up interviews can be used for those who did not reply, and their responses compared with those who did answer the question- naire to see if the two sets of responses are similar. If they are, it suggests that the responding and non-responding populations are the same, and there is no threat from this source to the validity of data collected.

***Reliability***

In terms of questionnaire design, a high reliability means that if you measured something today, you should get the same results at some other time, assuming

that what is being measured has not changed (Black, 1993). As we discussed in Chapter 4, reliability is a measure of consistency and can include measures of

* Stability (over time).
* Equivalence (administering two versions of a test instrument to the same people on the same day).
* Inter-judge reliability.

The extent of this consistency is measured by a reliability coefficient using a scale from 0.00 (very unreliable) to 1.00 (perfectly reliable). In practice, a score of 0.9 is generally deemed to be acceptable.There are several ways in which this coeffi- cient can be calculated. One of the most common is Cronback’s alpha, which pre- sents the average of all possible split-half correlations, and so measures the consistency of all items, both globally and individually.

**QUESTIONNAIRE ADMINISTRATION**

Even the best-designed questionnaire will not create an impact if care is not taken with its administration, one of the fundamental objectives of which is to maxi- mize the return rate.We examine next some of the techniques associated with dif- ferent kinds of survey methods that were discussed in Chapter 5.

***Self-administered questionnaires***

**Postal questionnaires**

It is usual for a questionnaire to be accompanied by a letter. Getting the content, style and tone of this letter right is just as important as achieving the quality of these elements in the questionnaire. Indeed, since respondents will probably read the letter first, it could be argued that it is even more important. It is essential that you get the respondent’s name, initials and preferred title absolutely right. Documentation sent to women should usually be titled Ms unless you know that they prefer another form.

The letter should cover issues such as the aims of the research, its impor- tance (particularly its importance to the respondent’s company or organization, if applicable), how long it will take to complete, and an assurance of confidentiality. The name of the sponsor or researcher should appear on the letterhead, and details of where to return the questionnaire should appear both on the letter as well as the questionnaire itself. Above all, the letter should be as brief and concise as possible, and should contain a note of thanks for the questionnaire’s comple- tion. If there are instructions that you particularly need to emphasize, state them as part of a postscript as people often notice these below the main text.

Saunders et al. (2000) list six further techniques that researchers will find useful:

**TABLE 8.4** LIKELY TIMING OF RESPONSES FOR POSTAL SURVEY

|  |  |  |
| --- | --- | --- |
| **Distribution** | **Timing (P-day)\*** | **Responses** |
| First posting | P-day + 10 days | 50 per cent of final return |
| First reminder | P-day + 17 days | 80 per cent of final return |
| Second reminder | P-day + 27 days | A few more |

\* P-day = Postal-day, i.e. the initial posting.

* Ensure that questionnaires and letters are printed and envelopes properly addressed.
* Make a pre-survey contact with recipients either by e-mail, post or phone to warn them that the questionnaire is on its way.
* Post the questionnaire and covering letter to arrive at a convenient time.
* One week after the initial posting, send out the first follow up reminder letters to all recipients.
* Send the second follow up reminder to those who have not responded after three weeks.
* Post out a third follow up if the response rate is low.

Of course, before reminders can be sent, it is necessary to know who has not responded. A useful technique is to number the questionnaires, but this will not work if anonymity has been promised to respondents. In this situation, a ‘scatter- gun’ approach may be necessary, reminding all respondents but apologizing in advance to those who have already responded.

When sending reminders, emphasize the importance of the study and do not imply that the initial response has been poor – imply the contrary, if anything (providing this is truthful).When prompting, it is important not to be apologetic. Enclose another copy of the questionnaire and another stamped addressed enve- lope in case people had not receive or had ‘mislaid the original’. In terms of responses and timings,Table 8.4 suggests a typical pattern. It can be seen that after just over two weeks you will have received about 80 per cent of what will prove to be your final total.You will know by this point whether your final return rate is going to be successful, or not.

Postal questionnaires should be sent by first class post and include a stamped addressed envelope. If the questionnaire is going to an individual in their home, Gillham (2000) suggests Thursday as the best day for posting as people have more time at weekends. Letters to organizations should be sent on Mondays or Tuesdays so that they can be completed at work.

**Delivery and collection questionnaires**

Since questionnaires are to be collected, clearly one of the prime factors is to ensure that respondents know exactly when this will occur. Saunders et al. (2000) advise that, when conducting research in an organization, response rates can be dramatically improved by calling all respondents to a meeting in the organization’s

time, explaining the purpose of the questionnaire, and getting it completed before people leave the meeting. A box near the exit to the room for collecting ques- tionnaires may help to assure confidentiality.

**Online questionnaires**

As we saw earlier, online questionnaires can be administered either by e-mail or via the Web. For e-mails, it is relatively easy to obtain people’s e-mail addresses, but to contact a sample of respondents ‘cold’ would risk the accusation of ‘spam- ming’, that is, sending unsolicited messages.Another danger is that anonymity will be lost as respondents can be identified by their e-mail addresses.

Nevertheless, e-mails can be used effectively for surveys either by including the questions in the main body of the e-mail or sending the questionnaire as an attached document. Including questions in the body of an e-mail message makes the questionnaire simple to return, but there is little opportunity for using the kind of layout and design that encourages the completion of a questionnaire.

If you are, say, conducting a survey within an organization that uses one software application standard, then you may be able to attach the document in a word processed application version that can be read by all. If the survey is cross- organization there will be risks that not all will be able to read the attachment, so including questions in an e-mail is the safest approach. After this, procedures for sending reminders are the same as for postal questionnaires.

***Interviewer-administered questionnaires***

**Structured interview**

Since structured interviews involve face-to-face contact, one of the essential administrative factors is arranging meetings with respondents, and improving the chances of respondents turning up for the interview.This chance will be increased if respondents are contacted in advance of the meeting and advised of dates, times and location, etc. If the structured interview involves some open as well as closed questions, it might be advisable to tape record the interview since transcribing verbal dialogue is difficult unless you are skilled at shorthand. The use of tape recorders involves ethical issues including confidentiality, so you must ask permis- sion before using one. Once interviews are completed, times for any return visits should be arranged.

**Telephone questionnaire**

For telephone questionnaires it is important that respondents know when they are to be interviewed, so they must be contacted by post and given clear details of dates and times (including the likely length of the interview). When calls are unsuccessful, the reasons should be noted, such as the fact that the respondent has

moved or did not pick up the telephone. In the latter case, call three more times at different times of the day.

|  |
| --- |
| **SUMMARY**   * Designing individual questions involves a rigorous process of analysis to avoid ambiguity, leading questions, double questions and simply misleading questions. * Questions must be clearly linked to the purpose of the research (as specified in the accompanying letter or documentation). * Questionnaires should start with questions that are easy to answer, interesting and transparently linked to the purpose of the research. * Questionnaire layout and the use of typography can make a questionnaire easier to complete and more appealing to respondents, enhancing the response rate. * Clear, well set out instructions on completing the questionnaire can also boost the response rate. * Web and e-mail questionnaires offer a new and potentially powerful tool, but also require additional design skills. * All questionnaires, whether paper-based, e-mail or Web-based, require thorough piloting which will include evaluation of accompanying documentation, instructions, individual questions, types of question, question sequencing, the use of scales and skip instructions – basically, everything!   **Summary of web links**  <http://www.accesscable.net/~infopoll/library.htm> <http://www.surveysystem.com/websurveys.htm> |

**Further reading**

Gillham, B. (2000) *Developing a Questionnaire*. London: Continuum. A small and simply written book that provides an excellent introduction to the subject. Includes chapters on questionnaire design, distribution, data presentation and the analysis of open and closed questions.

De Vaus, D.A. (2002) *Surveys in Social Research*, 5th edn. London: George Allen & Unwin. See specifically Chapter 7 on constructing questionnaires and Chapter 8 on administering questionnaires.

|  |  |
| --- | --- |
| **Suggested answers for Activity 8.2** |  |
| 1. An *ambiguous* question since the categories overlap. Also *impertinent* in two ways – the fact that age is asked for (why is this necessary?) and the curt way in which this is demanded. 2. *Vague* and therefore probably unreliable. 3. *Double question* and therefore also ambiguous. 4. *Loaded question*. 5. *Double negative*. It also contains the phrase ‘best practice’ – what does this mean? 6. Demands either *memory recall* (if the person is in a position to know the answer) or an expectation that they have the *knowledge*, which may not be the case. 7. *Impertinent*. 8. *No instructions*. It is unclear how to complete an answer – ticking or circling? The fact that only one answer can be given is assumed, but should be made explicit.   Finally, the questionnaire contains no introductory paragraph nor explanation of its purpose. It asks for respondents to give their name, which does not appear necessary, and asks for their salary, which is both unnecessary and impertinent. It offers no assurances of confidentiality, does not explain what is going to be done with the information and is unclear as to where it can be returned (and when). | |

**Collecting Primary Data: Interviewing**

**9**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Describe and choose between structured, semi-structured, non-directive, focused and informal interviews on the basis of the objectives of the research.**
* **Select between using interviews and self-completed questionnaires.**
* **Produce valid and reliable interview schedules.**
* **Conduct an interview skilfully, tactfully, safely and ethically.**

An interview is a conversation between people in which one person has the role of researcher.Very often, the interviewer will have on hand a set of written ques- tions which are posed in a structured and methodical fashion (a structured inter- view). Alternatively, these questions might only be used as an *aide-mémoire*, to remind the researcher of the key areas that need probing. In either case, interviews often make use of questionnaires, so this chapter has much in common with Chapter 8. However, whereas the previous chapter focused on the design of ques- tionnaires, this chapter looks at one way, the interview, in which they can be used. Hence, we are shifting from product (the questionnaire) to process.

Interviewing may pose challenges because of human interaction between the interviewer and respondent. The interviewer has to pose questions (in either a structured, semi-structured or unstructured format), listen to (and data capture) the responses and pose new questions. If the interview format is relatively unstructured, then these questions have to be constructed ‘on the fly’.The inter- viewer may also not only be listening to the verbal responses, but be noting other elements of the interview process such as the body language of the interviewee. However, despite the challenges involved, the well-conducted interview is a pow- erful tool for eliciting rich data on people’s views, attitudes and the meanings that underpin their lives and behaviours.

In this chapter, we will examine some of the different interview approaches, and look at some of the essential interviewing skills you will need to acquire.We will also look, briefly, at telephone interviews, and conclude with some thoughts on safety and ethical issues in interviewing.

**WHY INTERIEWS?**

There are a number of situations in which the interview is the most logical research technique. If the objective of the research, for example, is largely exploratory, involv- ing, say, the examination of feelings or attitudes, then interviews may be the best approach.The use of semi-structured interviews also allows the researcher to ‘probe’ for more detailed responses where the respondent is asked to clarify what they have said. This phenomenological approach, then, is concerned with the *meanings* that people ascribe to phenomena. As Arksey and Knight (1999) comment:

*Interviewing is a powerful way of helping people to make explicit things that have hitherto been implicit – to articulate their tacit perceptions, feelings and understandings.* (Arksey and Knight, 1999: 32)

Interviews are also useful where it is likely that people may enjoy talking about their work rather than filling in questionnaires. An interview allows them an opportunity to reflect on events without having to commit themselves in writ- ing, often because they feel the information may be confidential.They may never have met the researcher and may feel concerned about some of the uses to which the information may be put. Also, with questionnaires the concise meaning of a question may not always be clear, whereas with an interview meanings can be immediately clarified. Potentially, at least, interviews can produce a greater response rate for these reasons.

As Cohen and Manion (1997) point out, the interview can serve a number of distinct purposes. First, it can be used as the means of gathering information about a person’s knowledge, values, preferences and attitudes. Secondly, it can be used to test out a hypothesis or to identify variables and their relationships. Thirdly, it can be used in conjunction with other research techniques, such as sur- veys, to follow up issues. For example, a survey by a clothing company might find a relationship between age and the tendency to purchase certain kinds of clothes. The company might then follow this up with structured interviews among a sample of people from the original survey to explore in more depth the values and moti- vation behind these buying patterns.

Interviews are also preferable to questionnaires where questions are either open-ended or complex, or where the logical order of questions is difficult to pre- determine. But whether an interview is successful in eliciting the range and depth of answers required will depend on large part on the skills of the interviewer.

Essentially, the interview is the favoured approach where:

* There is a need to attain highly personalized data.
* There are opportunities required for probing.
* A good return rate is important.
* Respondents are not fluent in the native language of the country, or where they have difficulties with written language.

In contrast, standardized questionnaires are more powerful where:

* Large numbers of respondents must be reached.
* Better reliability of data is desired.

A summary of some of the pros and cons of interviews and self-administered questionnaires is presented in Table 9.1.

**SELECTING INTERVIEW APPROACHES**

There are several different types of interview, so the choice of interview technique will depend in large part on the aims and objectives of your research. Indeed, one of the purposes of the interview may be to determine these research objectives themselves. There may also be occasions when more than one interview type is used for a research project.

Interviews may be divided into five categories:

* Structured interviews.
* Semi-structured interviews.
* Non-directive interviews.
* Focused interviews.
* Informal conversational interviews.

We will look at each of the five interview approaches in turn.

***Structured interviews***

Structured interviews are used to collect data for quantitative analysis, and use pre-prepared questionnaires and standardized questions, that is, the same questions are posed to all respondents. Responses are recorded by the interviewer on a stan- dardized schedule, and, while there is some interaction between interviewer and respondent, this is kept to a minimum. Ideally, questions are read out in the same tone of voice so as not to influence answers. Structured interviews are often used as a precursor for more open-ended discussions such as non-directive interviews.

***Semi-structured interviews***

Semi-structured interviews are non-standardized, and are often used in qualitative analysis. The interviewer has a list of issues and questions to be covered, but may

**TABLE 9.1** COMPARISON OF INTERVIEWS AND SELF-ADMINISTERED QUESTIONNAIRES

**Characteristics**

Provide information about

Best at

Richness of responses

Ethics

Sample size

Time cost

Planning and design

Operation

Data transcription Data analysis

Money costs

**Interviews**

As for questionnaires, but potential for exploring in more depth

Exploring stories and perspectives of informants

Dialogue between interviewer and respondent allows for nuances to be captured and for questions to be clarified and adapted or improvised Long interviews common

Interviewers know whom they have interviewed, although transcripts can by anonymized

With the exception of telephone interviews, less suitable for wide coverage

Devising interview guide, piloting, etc., may be less of an issue

Arranging interviews, travelling, establishing rapport – all time-consuming

Typically 7–10 hours for 1 hour interview

Time needed usually underestimated

High if includes interviewers, travel costs, tapes, batteries, transcription of tapes

**Self-administered questionnaires**

Attitudes, motivation, opinions, events

Testing the validity of a hypothesis

Questions cannot be modified once printed, and nuances of respondent’s voice cannot be heard

Long questionnaires rarely acceptable

Anonymous questionnaire responses can be assured

If generalizing to a population, samples often have to be large

Devising questionnaire (checking validity and reliability), piloting,etc. may be very

time-consuming Distributing questionnaire

Usually swift, especially where optical readers are used

Usually swift (unless there are many open-ended questions)

Mainly costs of printing, distributing and receiving questionnaires. Looks cheap per questionnaire, but looks more expensive if return rate low

*Source*: Adapted from Arksey and Knight, 1999

not deal with all of them in each interview. The order of questions may also change depending on what direction the interview takes. Indeed, additional ques- tions may be asked, including some which were not anticipated at the start of the

interview, as new issues arise. Responses will be documented by note-taking or possibly by tape-recording the interview.

The semi-structured interview allows for probing of views and opinions where it is desirable for respondents to expand on their answers.This is vital when a phenomenological approach is being taken where the objective is to explore subjective meanings that respondents ascribe to concepts or events. Such probing may also allow for the diversion of the interview into new pathways which, while not originally considered as part of the interview, help towards meeting the research objectives.

***Non-directive interviews***

Non-directive interviews are used to explore an issue or topic in depth and ques- tions are not, generally, pre-planned. Clearly, though, the researcher must have a notion of the objectives of the research and, therefore, what issues are going to be addressed in the interview. The format of the interview will be such that the respondents are allowed to talk freely around the subject.The input of the inter- viewer is mainly confined to checking on any doubtful points and rephrasing answers to check for accuracy of understanding. Like semi-structured interviews, non-directive interviews tend to collect data for qualitative analysis.

***Focused interviews***

The focused interview is based upon the respondent’s subjective responses to a known situation in which they have been involved. The interviewer has prior knowledge of this situation and is, thus, able to re-focus respondents if they drift away from the theme. An analogy would be the celebrity television interview in which the interviewer has already analysed the interviewee’s autobiography and wishes to probe certain issues in more depth.

***Informal conversational interviews***

The informal conversational interview relies on the spontaneous generation of questions as the interview progresses.This is the most open-ended form of inter- view technique. One of the advantages of this approach is the flexibility it offers in terms of what path the interview takes. Indeed, the interviewee may not even know an interview is taking place.This, though, will rule out the taking of notes during the interview. In cases where the fact that an interview is taking place *is* known, it is appropriate to take notes or to use a tape recorder.

One of the drawbacks of the conversational interview is the danger of the ‘interviewer effect’, that is, the interviewer may begin to influence the course and direction of the interview.Another disadvantage is that it may take some time before the interviewer has posed similar questions to the set of people being interviewed.

**TABLE 9.2** CHARACTERISTICS OF STRUCTURED, SEMI-STRUCTURED AND UNSTRUCTURED INTERVIEWS

**Structured**

Quick to data capture

Use of random sampling

Interview schedule followed exactly

Interviewer-led

Easy to analyse

Tends to positivist view of knowledge

Respondents’ anonymity easily guaranteed

**Semi-structured**

Slow and time-consuming to data capture and analyse

The longer the interview, the more advisable it is to use random sampling

Interviewer refers to a guide containing mixture of open and closed questions Interviewer improvises using own judgement

Sometimes interviewer-led, sometimes informant-led

Quantitative parts easy to analyse

Mixture of positivist and non-positivist

Harder to ensure anonymity

**Unstructured (non-directive, focused and informal conversation)**

As for semi-structured

Opportunity and snowball sampling often used. In organizations, targeting of ‘key informants’

Interviewer uses *aide-mémoire* of topics for discussion and improvises

Non-directive interviewing

Usually hard to analyse

Non-positivist view of knowledge

Researcher tends to know the informant

*Source:* Adapted from Arksey and Knight, 1999

Finally, the data collected through conversational interviews may be difficult to analyse because different questions have been asked of different people. As a result, the researcher will have to sift through the data to find emerging patterns.

A summary of the characteristics of the different types of interview is provided in Table 9.2.

**DESIGNING CREDIBLE INTERVIEWS**

One of the prime driving forces behind the design of interviews is the search for credibility by ensuring that the findings can be trusted, which includes issues of validity and reliability. But since interviews often come from a more qualitative perspective, it would be a mistake to apply these concepts rigidly. Instead, we might want to also make use of other indicators of credibility.We also need to ask some familiar questions about the extent to which the findings from the inter- view study can be generalized to a wider population.

***Validity***

As we saw in Chapter 4, validity means that an instrument must measure what it was intended to measure. In the case of structured and semi-structured interviews, the issue of validity can be directly addressed by attempting to ensure that the ques- tion content directly concentrates on the research objectives. For informal conver- sational, focused and non-directive interviews, the issue of validity is more problematic because, by their very nature, the direction questions take will depend, in large part, on the responses of the interviewee. In a sense, instead of these approaches commencing with a rigid set of objectives, the subject matter emerges inductively from the interview itself. But the research will need to ensure that, if any research questions require addressing, this is achieved by the end of the interview.

According to Arksey and Knight (1999), validity is strengthened by:

* Using interview techniques that build rapport and trust, thus giving infor- mants the scope to express themselves.
* Prompting informants to illustrate and expand on their initial responses.
* Ensuring that the interview process is sufficiently long for subjects to be explored in depth.
* Constructing interviewing schedules that contain questions drawn from the literature and from pilot work with respondents.

Another important issue of interview design is that of external validity, as we have seen, the extent to which findings from a study can be generalized. As we saw in Table 9.1, interviews are best used when the study is relatively small scale, since interviewing very large samples can be both expensive and time-consuming. Hence, external validity may be restricted. Arksey and Knight (1999), however, offer two practical principles that can be adopted in making a more plausible case for generalizing from interview findings:

* Try to select a sample that allows for a subject to be viewed from all relevant perspectives.
* Keep increasing the sample size, or sub-samples that represent different perspec- tives, until no new viewpoints are emerging from the data.A sample size of eight is often sufficient, although a survey should then be used to verify the data.

In a practical sense, this means that interview data need to be studied and analysed as they are collected, until it is clear that perspectives are being repeated and data saturation reached.

***Reliability and bias***

For a research instrument to be reliable it must *consistently* measure what it set out to measure. There is, at least, some potential for such consistency when an interview is standardized, with the same questions being asked of each respondent. However, even

with standardized questions the issue of interviewer bias comes into play – does the interviewer ask the questions in the same way and with the same tone of voice with all respondents? In other words, what must be avoided is the ‘interviewer effect’.

Interviewer bias can creep into the interview situation in many subtle, and not so subtle, ways. An interviewer, for example, might (unconsciously) give less time to shopfloor workers when conducting an interview than to supervisory and management grade employees. Similarly, prompt cards might be issued to shopfloor workers but not to ‘more intelligent-looking’ office workers.The only way to avoid this kind of systematic error is to standardize not only the interview schedule, but the behaviour of the interviewer. This is especially important if interviews are being conducted by more than one person.This does not mean that all interviews will be identical, since sometimes an interviewer will have to depart from a script to provide guidance or clarification.The skill of the interviewer is to provide such explanation without influencing the answer of the respondent.

Oppenheim (1992) suggests a number of ways in which bias occurs, namely:

* Departures from the interviewing instructions.
* Poor maintenance of rapport with the respondent.
* Altering factual questions.
* Rephrasing of attitude questions.
* Careless prompting.
* Biased probes.
* Asking questions out of sequence.
* Biased recording of verbatim answers.

One way of avoiding, or at least minimizing, interviewer bias is to require all interviewers to follow the same protocol. Hence, a set of guidelines might be drawn up which ask the interviewer to read the questions *exactly* as they are writ- ten, to repeat a question if asked, to accept respondent’s refusal to answer a ques- tion without any sign of irritation, and to probe in a non-directive manner. The following Case Study gives a practical example of how bias can occur if guide- lines such as these are not followed.

|  |
| --- |
| **Case Study 9.1 Interviewer bias – it can drive you to drink!**  In 1929, during the Great Depression, a New York researcher hired several inter- viewers to ask destitute people about their situation. Several years later the researcher reviewed some of the interviews. He noticed that the responses of one interviewer attributed most of the causes of destitution to economic factors such as unemployment, while the responses of another interviewer focused on problems with alcohol abuse. The researcher located the two interviewers and talked to them. He found that the first one was a socialist and the second, a prohibitionist. There was, thus, a strong suggestion that the causes of bias were located in the behaviour of the interviewers.  *Source:* Adapted from Beed and Stimson, 1985 |

|  |  |
| --- | --- |
| **Activity 9.1** |  |
| Video record a ‘serious’ television interview. From the content of the interview look for evidence of interviewer bias either in the content of the questions, the way in which they are expressed, or the non-verbal behaviour of the inter- viewer. Political interviews, of course, are not necessarily intended to exem- plify the degree of objectivity of a research interview, but they may illustrate the issue of bias more clearly. | |

***Quality indicators***

We have looked so far at validity and reliability as factors that enhance the credibility of an interview study.We need, however, to find some alternative, or at least additional, sources of quality. One important indicator is *consistency*, showing how the research has been conducted and the plausibility of the researcher’s actions and analysis.The study should also provide evidence of *accu- racy*, showing that the data is a fair representation of what informants have actually said. This might mean checking with interviewees that they have not been misinterpreted. Finally, the study must attempt to demonstrate *neutrality*, showing that the researcher is aware of the possible confounding effects of their own actions and perceptions and that these, as far as possible, have been accounted for.

**INTERVIEWING SKILLS**

Interviewing is a skill that must be learned through experience and practice. Of course, the respondent must first of all agree to be interviewed, and this might depend on a number of factors. Arksey and Knight (1999) suggest that getting an interview might depend upon:

* *Your status.* Are you ‘internal’ to the organization, or, say, someone completing a research project for an external client? If you are an internal researcher, how senior are you in the organization – and particularly, how senior compared to the interviewee?
* *The project.* Is the project of interest to the potential respondent? Is there a potential pay-off?
* *Yourself.* Do you seem trustworthy, personable and professional?

Once agreement is obtained, there is some preparatory work to be done, after which there is a number of techniques that help in the interviewing process.

***Getting started***

**Preparation**

Interviews cannot be rushed. Wengraf (2001) advises that you should arrive at least 30 minutes before the scheduled interview to make the necessary prepara- tions and put aside at least an hour after the interview to make field notes. So, a 45 minute interview, for example, could take up to 2–3 hours to complete. Only by allowing yourself a clear stretch of time will you be assured that the interview will be conducted in a stress-free and unhurried fashion.

Wengraf sets out a schedule that should be followed, even before the day of the interview. About three weeks before, it is sometimes useful to get respondents to complete a pre-interview questionnaire dealing with demographic issues (for example, age, occupation and other details) so that the interview can focus on more substantive matters. Or you may have requested material from the respon- dent, and you will need time to read and reflect on it.About 7–10 days before the interview, you need to contact the respondent to make sure that they are still available, provide final confirmation about the exact location of the interview, and respond to any last-minute queries or concerns.The day before the interview you need to check that you have all the material you need at your disposal, and espe- cially that you have an up-to-date version of your interview schedule. Obviously, make sure that any equipment such as tape recorders are working and that you have spare batteries, plenty of blank tapes, cables to the electricity supply and extension leads, note paper, pens and perhaps two bottles of mineral water in case you or the interviewee gets thirsty.

**Preliminaries**

The first task of the interviewer is to explain the purpose of the interview, who the information is for, how the information is going to be handled (including issues of confidentiality), why the information is being collected and how it will be used. This should not require a long speech, but should be done quickly and simply. Above all, the importance of the information should be stressed. If the research has been commissioned by a particular division or department of the organization this should be made clear.

Also ensure that the seating arrangements are acceptable to both parties. Sitting closely and face-to-face can feel confrontational and threatening. It is usu- ally best to face each other but at a slight angle. Having some furniture such as a table between the interviewer and respondent also provides something on which to place note-paper and creates safe ‘distance’ between the parties. The seating should also be arranged so that the interviewee cannot read forthcoming ques- tions or any notes that are being made.

**Building rapport**

Rapport means an understanding, one established on a basis of respect and trust between the interviewer and respondent. To establish a rapport it is particularly

important to make the respondent relaxed and to get the interview off to a good start.This means you should:

* Describe how the interview will be conducted, how long it should last and the general subjects that are to be covered.
* Ask for permission to audio-tape the interview (and listen attentively for responses and note body language).
* Make guarantees of confidentiality.
* Ask if the respondent has any questions.

Rapport is described by Oppenheim as an ‘elusive quality’ (1992: 89), and one that often only experienced and skilled interviewers possess. If an interviewer has little rapport, the respondent may be unwilling to answer questions or may cut the interview short. If the interviewer has too much rapport he or she may soon find themselves cast in the role of social worker or counsellor.The secret is to remain objective, professional and detached yet relaxed and friendly (who said that interviewing was easy?!)

***Conducting the interview***

**Impression management**

Oppenheim (1992) warns that an interviewer creates an impression on the respondent, even before he or she opens their mouth. Features such as general appearance, mode of dress, accent (see next section), hairstyle, ethnicity and social background may all play a part. Different respondents will be affected in different ways. If an interviewer wears an expensive business suit and interviews top man- agement, this might be acceptable, but would it receive the same reaction in the machine shop? As Oppenheim warns, however, there are no hard and fast rules here. Production line workers might be quite intrigued about being interviewed by someone in a suit and tie.

The key is that the interviewer should be aware of the process of impres- sion management, and should try to avoid giving expression to her or his own distinctive style.The aim is for bland, social neutrality.

**Use of language**

One problem that needs to be borne in mind is that words can have different meanings to different people. In the UK, especially, there are difficulties stemming from the way different social classes use vocabulary.The word ‘dinner’, for exam- ple, has a meaning that is different in middle and working class language. In a busi- ness setting, the word ‘management’ may have different connotations. Managers themselves, for example, may see it as a way of steering the company (in the inter- ests of *all* employees) towards profit and efficiency. Some employees, however, may view the word more negatively in terms of interference and control from ‘above’. The key is making use of language that is accessible to your audience.

**Maintaining control**

Since time is usually of the essence, it is important that the interviewer keeps control of the interview, minimizing long-winded responses and digressions. Patton (1990) argues that control is maintained by:

* Knowing what the interview is seeking to find out.
* Asking the right questions.
* Giving appropriate verbal and non-verbal feedback.

This means listening carefully to responses and channelling the interview back onto the right tracks if necessary.As Patton (1990) warns, it is not enough to have an excellent list of questions if the respondent is permitted to stray from the point.

|  |  |
| --- | --- |
| **Activity 9.2** |  |
| Consider the following exchange:  *Interviewer*: Could you tell me something about your feelings when volun- tary redundancies were called for.  *Respondent*: The request for redundancies came in a letter to all of us just before Christmas last year. They were asking for 200 people to go, out of a workforce of just 850. Quite a few people I know were very interested in the package on offer from day one.  Is the response an acceptable reply to the question?  *Suggested answers are provided at the end of the chapter.* | |

Verbal and non-verbal communication should be used to provide appropriate feedback. If, for example, the respondent is on-track, head nodding, the active taking of notes and the occasional verbal acknowledgement, should all help. Similarly, the use of a silent probe, remaining quiet when further elaboration of a point is desired, is quite valid. If the respondent is straying off the point, then the usual cues such as head nodding should cease, and a new question interjected as soon as the respondent hesitates. As Patton (1990) warns, it may sometimes become necessary to actively intervene with a statement such as:

Let me stop you here, for a moment. I want to make sure I fully understand some- thing you said earlier. (Then ask the question aimed at getting the response more targeted.) (Patton, 1990: 332)

Do not be embarrassed about interrupting the interviewee if this means getting the interview back on track. But one of the skills of interviewing is knowing what is relevant and irrelevant as the interview progresses (so think back to your research objectives or general theme!).

**Improvising**

In semi-structured or unstructured interviews, improvisation may be the key to success. Arksey and Knight (1999) offer the following tips:

* Vary the question order to fit the flow of the interview.
* Vary the phrasing of the questions to help the conversation seem natural.
* Let the interview seem to go off track.
* Build trust and rapport by putting something of the interviewer’s self into the interview, possibly by raising similar or different experiences.

Improvising, of course, is a skill that needs to be built through experience.

|  |  |
| --- | --- |
| **Activity 9.3** |  |
| Having used a semi-structured or unstructured approach, go through the tran- scripts and note where you improvised. What was the result? How else could the question or comment have been phrased to improve the response? Was the eventual outcome a success? Should you continue with this approach, or adopt a more structured one? | |

**Questioning techniques**

As with the case of questionnaires, interview questions should be phrased so that their meaning is unambiguous, and they should be delivered in as neutral a tone of voice as possible. As we saw in Chapter 8, there are also certain ways of formulating questions that must be avoided.These include questions that:

* Contain jargon.
* Use prejudicial language.
* Are ambiguous.
* Lead the respondent.
* Include double questions.
* Contain hypothetical statements.
* Probe personal or sensitive issues.
* Require memory recall or knowledge the respondent does not possess.

Cluster groups of questions that deal with similar issues, and then sequence these blocks of questions in a logical order.

**Active listening skills**

Active listening involves attentive listening, that is, not just listening to the words that are being said, but also to the tone and emphasis. Attentive listening also means that the respondent should be doing most of the talking! If attentive listen- ing is achieved, it should be possible to pick up new or significant themes that can

be probed with new questions. Sometimes silences or incomplete statements can reveal more than what is actually said.Attentive listening involves identifying these incomplete replies and following them up.

It should be remembered that an interview is not a normal conversation and therefore the usual norms of human interaction do not necessarily apply. Where in normal conversation it might be acceptable to occasionally glance at one’s watch or look away, in interviews a far greater degree of attentiveness is required. This means listening to and interpreting the meaning of what is being said, but also noting the tone and delivery of the dialogue to pick up any traces of irritation, confusion or boredom.

**Observing**

Like listening, careful observing helps to detect information on how the interview is progressing. Observation of the respondent’s body language, for example, is important, to detect important clues on the respondent’s concentration level, motivation to continue with the interview and whether she or he is at ease. If negative signs are detected, it may mean changing the sequencing of questions, bringing easier or less controversial ones up the order.

Of course, self-observation (reflection) is just as important. Self- understanding helps us to make our questioning and probing more sensitive. If, for example, the interviewer knows that he tends to dominate most natural con- versations, he might make a conscious effort to hold back and leave spaces for the respondent to fill.

**Testing and summarizing understanding**

A useful approach is occasionally to repeat back to the interviewee what you believe they have just told you. This is particularly important if there are state- ments or issues that are not fully understood.

**Closing the interview**

It is at this point that you should check that you have asked all the questions that you intended. It is worthwhile asking the interviewee if they have any questions or final comments that they would like to make.

It is important that both you and the respondent leave the interview with a positive sense of achievement. Even if you feel less than elated by the data you have gathered, thank the interviewee for their help and their valuable observa- tions. Then describe what happens next, particularly in terms of whether the respondents will be needed for checking the accuracy of transcripts, and the reporting process and follow up work. It is worth noting that interviewees often make some of their most interesting and valuable points once they think that the interview is over. Interviewers should not then suddenly scramble for note paper, but should remember and note these remarks once the respondent has left the interview setting.

***Recording and transcribing data***

There should be no short cuts when it comes to recording data.The analysis stage is made superfluous if the data have not been collected carefully. Patton (1990) puts it bluntly:

*No matter what style of interviewing is used, and no matter how carefully one words interview questions, it all comes to naught if the interviewer fails to capture the actual words of the person being interviewed.* (Patton, 1990: 347)

Taking notes may be useful for a number of reasons, since it:

* Can help in the formulation of new questions.
* Provides a means for locating important quotations during later analysis.
* Is a non-verbal behaviour that helps pace the interview, providing the inter- viewee with a cue that they have said something significant.

Note taking, however, is much harder than it sounds, particularly because making handwritten notes is a slow and often inaccurate process.You will also be observ- ing the respondent and thinking of the next question. It is probably best to jot down key words and occasional verbatim comments. It is usually better to make notes in conjunction with an audio or video recording. Particularly in the case of the former, it should be possible to note the tape recorder counter number where a key statement has been made.

The use of a tape recorder is vital for conducing interviews. Not only does it record the essential data, it permits the interviewer to concentrate on the process of listening, interpreting and re-focusing the interview. Using a tape recorder, though, is not always without its problems. In the workplace, respon- dents may, initially, feel uneasy about being tape-recorded. They will need reas- surance as to confidentiality. In terms of the ethics of research, they should also be given the right to turn off the tape recorder at any time.

Give some careful consideration to the recording equipment you will need. Ensure you have enough tapes for the length of interview. Always make use of an external microphone rather than relying on the tape recorder’s internal micro- phone, as this will give you superior sound reproduction.

|  |  |
| --- | --- |
| **Activity 9.4** |  |
| Test out the quality of reproduction of your tape recorder by making practice recordings at different distances from the microphone. What is the furthest dis- tance that gives you a quality of recording from which you can comfortably transcribe? If you are doing group interviews, will you need two microphones? | |

Patton (1990) suggests that the ideal objective is to achieve a full transcription of the interview.This process, however, is both expensive and time-consuming, with

perhaps each hour of live interview requiring between 7 and 10 hours of transcribing. Nevertheless, there is really no substitute for being able to see all the transcribed data at a glance during the analysis stage of the research. If it is simply impractical to achieve full transcription, an option is to use notes taken at the interview to locate key quotations or passages that can be accessed on the tape for transcription.

***Dealing with problem respondents***

Interviewing presents a wide variety of potential difficulties. Within the workplace, people may be very reluctant to answer questions connected with their job responsi- bilities because they may feel vulnerable.Why am I being asked about my job? Why have *I* been picked out? What are they going to do with the information? Similarly, they may be nervous about expressing their views about issues and subjects connected with the company, and may be tempted to provide answers they think are wanted (socially desirable responses) rather than what they actually believe. Also, unless the research is seen to be officially sponsored by the organization in some way, it might be viewed as irrelevant snooping. If the research *is* sponsored, the level of this spon- sorship within the organization hierarchy may prove a factor in eliciting cooperation.

Knowledge questions can also prove to be an embarrassment if people do not know the answer. The interviewer must never show surprise at a wrong answer or hint what the correct answer should be. Keep a look out for body language that signals discomfort, anger or irritation, and be prepared to switch questions or even to curtail the interview. Table 9.3 provides a simple summary checklist of do’s and dont’s of conducting interviews.

***Using multicultural interviews***

It is worth considering the implications of conducting interviews with people who are of a different ethnic, social or cultural group to that of the interviewer. We have seen the importance of building rapport between the two parties, and the significance of impression management and the use of language. It is extremely easy for any of these elements to go wrong unless the interviewer is aware of, and prepared for, the kinds of problems that can arise.Vazquez-Montilla et al. (2000) talk about the need for *culturally responsive* interviewing that is more sensitive to and aware of multi-ethnic cultural perspectives, and they introduce the notion of ‘Triple A’ (AAA) practices: authenticity, affinity and accuracy.

Working with Hispanic families in Florida, USA, the researchers found that their own Hispanic backgrounds were vital in establishing authenticity since the researchers were able to ‘validate their ethnic match and cultural backgrounds’ (Vazquez-Montilla et al., 2000: 4).To accomplish this task they were able to make reference to specific cities, events, characteristics of their native country, foods, etc. Since respondents were made aware of the interviewer’s shared cultural perspectives, they became more confident that their message would not be misunderstood. Affinity was established through the interviewer spending time building up a

**TABLE 9.3** CHECKLIST OF DO’S AND DON’TS OF INTERVIEWING

**Do**

Establish clearly what the interviewee thinks

Provide a balance between open and closed questions

Listen carefully to all responses and follow up points that are not clear

If necessary, either to gain interviewer thinking time or for the clarity of the audio recording, repeat the response

Give the interviewee plenty of time to respond

Where interviewees express doubts or hesitate, probe them to share their thinking

Be sensitive to possible misunderstandings about questions, and if appropriate repeat the question

Be aware that the respondent may make self-contradictory statements

Try to establish an informal atmosphere

Be prepared to abandon the interview if it is not working

*Source*: Adapted from Arksey and Knight, 1999

**Don’t**

Do not give an indication to the interviewee of *your* meanings and understandings or appear to judge their responses

Do not ask leading questions or questions to which it is easy for interviewees to simply agree with all you say

Do not rush on to the next question before

*thinking* about the last response

Do not respond with a modified version of the response, but repeat exactly what was said

Do not rush, but do not allow embarrassing silences

Avoid creating the impression that you would prefer some kinds of answers rather than others

Do not make any assumptions about the ways in which the interviewee might be thinking

Do not forget earlier responses in the interview

Do not interrogate the interviewee

Do not continue if the respondent appears agitated, angry or withdrawn

knowledge of the community, often through community agencies and groups. During the interviews, the interviewer attempted to match the respondent’s con- versational and interaction style, terminology and gestures (although stopping short of mirroring exaggerated mannerisms which would probably appear mock- ing and offensive). To enhance accuracy, interviewers made themselves aware of basic language terms used by participants by keeping a list of words and idiomatic expressions commonly used by the group. A second researcher always validated the analysis so that cultural stereotyping was avoided.

Keats (2000) suggests that some cultures would find the following actions unacceptable:

* Sending a woman to interview a man.
* Sending a man to interview a woman.
* Sending a person of one religion to interview a person of a different religion when factions from each are in conflict.
* Making direct rather than circuitous replies.
* Looking directly into a person’s face when speaking.

Clearly, when conducting interviews with people of a different cultural or ethnic background to yourself, you need to be sensitive to these kinds of issues.

**GROUP INTERVIEWS**

So far we have assumed a one-to-one situation between an interviewer and single respondent. But, of course, other combinations are possible. Group interviews can comprise a number of different formats, including multiple interviewers, joint interviews and focus groups. An advantage of using group interviews is that costs can be drastically reduced, while the chance of non-response is reduced to about zero. But a drawback is that the social nature of responding may have an influ- ence. Furthermore, as Dillman (2000) reports, group interviews using a question- naire may invoke test-taking behaviour. He observed respondents checking through questions after completing them and even changing their answers.

***Multiple interviewers***

It can be very useful to have more than one interviewer present since different roles can be performed. For example, one interviewer can act as chairperson, con- trolling the pace and direction of the interview, while the other takes notes.At the end of the interview, each researcher can compare thoughts and observations to ensure that nothing has been missed.

***Joint interviews***

Joint interviews involve one researcher talking with two people simultaneously about one phenomenon. This can facilitate collecting differing or corroborating perspec- tives of the one event. Having both parties present can also allow for them to fill in details that the other has omitted.Against this must be set the danger of interviewees diverting each other’s attention, or one respondent dominating the interview.

***Focus groups***

Focus groups originated in market research in the 1950s when people were brought together so that their attitudes to new products could be tested.Today, focus groups are still used for this purpose, but their popularity has spread to wider aspects of research. They can be a low cost way of collecting data, but require a considerable amount of cooperation and enthusiasm from participants. Logistical problems can also arise. If the focus group contains only six or seven participants, then tape record- ing may not pose a major problem. But if the group size is 20 or more, you may need two good quality tape recorders strategically placed to pick up usable recordings.

So far, we have assumed that interviews can be successfully conducted either in an unstructured manner or through the use of various types of questionnaires

or interview schedules. However, there may be some special groups for which these techniques will either be inappropriate or entirely ineffective.The next Case Study provides an illustration of some more creative and imaginative approaches.

|  |
| --- |
| **Case Study 9.2 Secret boxes, soap operas and spiders**  Punch (2002) reports on a research study she carried out that explored young people’s perceptions of their problems, coping strategies and help-seeking behaviour. The sample was drawn from both young people living at home and in residential care. The interviews were conducted using single sex friendship groups of five people. Clearly, because of the private nature of their problems and often their diffi- culty or unwillingness to articulate their worries, some innovative approaches were required.These included:   * *A ‘secret box’*. The young people were asked to write down any current or recent problem and to post their anonymous response into a box.This was then sealed with sticky tape with the assurance that responses would only be read by the researcher after the completion of the last interview with each sample. It was also shaken up to ensure that the last response would not be on the top. Respondents were also permitted either to write a response or to post a blank piece of paper. This process both assured anonymity but also that questions would not be asked about the responses.Typical concerns to emerge concerned puberty, grief at the death of a close relative and illegal activities (drinking, drug taking and stealing). However, one of the limitations of this technique is that, because of anonymity, it is impossible to probe any of the responses. * *Stimulus material: video clips from soap operas*. Three short clips from recent soap operas were recorded onto one video tape, each one depicting a typical prob- lem that young people have to cope with. During a group interview, each of the clips was discussed in relation to young people’s coping strategies. They were firstly asked how the people in the clip had coped. Secondly, they were asked how they would cope in similar circumstances. Punch describes these video clips as visual vignettes. The clips were highly effective in sparking off memories of personal experiences and provided a stimulus for discussions. One of the drawbacks was the time it took to locate appropriate clips and the time taken up by the clips in the interview sessions. * *Stimulus material: problem letter pages* were used in a similar way as video clips to discuss issues such as eating disorders, sexual activity and depression. * *Stimulus material: task-based activities.* A grouping and ranking exercise was used where the young people grouped 20 different problems written on plain index cards and placed them into three piles: big, middle and small worries.Then each pile was ranked from the most to the least worry. This was then used to pro- voke a group discussion about the nature of different problems. Spider diagrams were also used. Using a large sheet of paper,‘coping with problems’ was circled in the middle and each person was asked to add a ‘leg’ indicating how they dealt with problems. Thus, the diagrams were used to build information and allow for issues to be probed in greater depth.   *Source:* Adapted from Punch, 2002 |

|  |  |
| --- | --- |
| **Activity 9.5** |  |
| Consider the following questions in relation to Case Study 9.2:   1. Why were the interviews conducted with single sex friendship groups? 2. In developing a simple protocol that you could use for each of the above activities, how would you explain each activity, and how would you provide the necessary reassurances?   *Suggested answers are provided at the end of the chapter.* | |

**TELEPHONE INTERVIEWS**

We looked briefly at telephone interviews in Chapter 5 in the context of conducting telephone surveys. One of the main advantages of conducting interviews by telephone is the low cost.They also tend to be conducted faster, another impor- tant benefit. A potential disadvantage of telephone interviews is the fear that the refusal rate may be higher. Oppenheim (1992), however, provides some comfort here, suggesting that refusals are sometimes actually lower because of ‘interviewer invisibility’ to some respondents. But interviewers will need to adopt a professional telephone manner, especially to strike up a rapport. For a long interview, though, it is usually best to make a preliminary call to set up a time for the interview.

In terms of questions, all but the most complex kinds can be asked over the telephone. Indeed, as Arksey and Knight (1999) point out, one of the strengths of telephone interviews over questionnaires is that the interviewer can help respon- dents with any misunderstandings or difficulties they have. Response rates can also be raised if the interviewer has a slick, persuasive manner and can give encourage- ment.Table 9.4 provides a summary of the kinds of responses commonly given.

**SAFETY ISSUES**

Safety is probably not an issue that is uppermost in the minds of most researchers as they plan an interview. Often, respondents are known to the interviewer, or the interview may be conducted over the telephone or in a public place. Occasionally, however, a study may require that interviews are conducted in someone’s home or isolated work location in circumstances where the respondent is not known to the researcher. Kenyon and Hawker (1999) raised this issue in an e-mail discus- sion with fellow researchers (recall Case Study 5.2 in Chapter 5). While most researchers (thankfully) have never experienced any problem, a minority had, and as the authors comment: ‘once would be enough’. Their e-mail survey helped them to compile a list of ‘best practice’ guidelines, presented in Table 9.5.

Once again, it must be emphasized that the majority of interviewers face no significant problems in conducting their research. But as these guidelines make clear, it is better to be safe than sorry.

**TABLE 9.4** EXAMPLE OF EXPLANATIONS GIVEN BY TELEPHONE INTERVIEWERS

**Respondent’s comments**

What’s the purpose of the survey?

How will the survey be used?

How did you get my number?

Why don’t you want to talk to [*someone of the opposite sex, someone older or younger*] rather than me?

Hmm. I’m still not sure

**Typical interviewer’s replies**

The questions are about your attitude to [*give name of topic*]

It will give us a better idea of [*what to do/how to improve things/what the firm, department, etc. should concentrate on in the future*]

I’m doing this as part of my work for [*name your institution*]

All your replies will be treated in confidence

A summary of the findings will go to [*add name of sponsor*]

A short version of the survey will be available to our respondents at [*give Web address*]

Your number was chosen by a computer which ran- domly generates a list of numbers

Your name was provided by a professional association/club [*name association/club*]

I need to make sure I have a good mix of men and women, younger and older people. You have been chosen because this helps us to achieve this mix

If you want to check [*our/my*] credentials, why not call [*give name and number of sponsor*] and I’ll call back later

*Source*: Adapted from Arksey and Knight, 1999

**TABLE 9.5** BEST PRACTICE GUIDELINES FOR RESEARCHER SAFETY

Equipment Carry a mobile phone. This helps researchers to check ‘in and out’ of interviews and provides a means of summoning help if needed.

Use official stationary to arrange and confirm interviews and show an identity card if you possess one, as these can help to confirm a professional identity and show that you are affiliated to an institution.

Personal Develop an awareness of body language (both your own and that of your demeanour respondents).

Be honest, but not over friendly, dress in an appropriate manner and avoid carrying or wearing valuables.

Knowledge and Have a good knowledge of the working environment both in terms of the accountability research venue and the geographical area in which it is situated.

Record and report any doubts or incidents, however trivial they may seem.

Advise others (particularly friends or relatives) of your whereabouts and movements at all times during fieldwork.

Avoidance Use daylight hours for interviews if possible.

strategies If interviewing someone in their home, take along a second interviewer as a ‘minder’.

Avoid potentially dangerous areas such as unlit stairwells, lifts and empty buildings.

Try to use informants that are ‘known’ in some way, for example, through a third party or through a network. Male respondents should be accessed through female friends or partners.

Avoid pressurizing anyone to become involved in the research.

*Source*: Adapted from Kenyon and Hawker, 1999

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CONSENT FORM**  **Beechwood Academy**  *Evaluation of anti-bullying policy*  This consent form is designed to check that you understand the purposes of the study, that you are aware of your rights as a participant and to confirm that you are willing to take part | | | | |
| Please tick as appropriate | | | | |
|  | | | YES | NO |
| 1 | I have read the leaflet describing the study | |  |  |
| 2 I have received sufficient information about the study for me to decide whether to take part | | |  |  |
| 3 | I understand that I am free to refuse to take part if I wish | |  |  |
| 4 I understand that I may withdraw from the study at any time without having to provide a reason | | |  |  |
| 5 | I know that I can ask for further information about the study from the research team | |  |  |
| 6 I understand that all information arising from the study will be treated as confidential | | |  |  |
| 7 | I know that it will not be possible to identify any individual respondent in the study report, including myself | |  |  |
| 8 | I agree to take part in the study | |  |  |
| Signature: | | Date: | | |
| Name in block letters, please: | | | | |
| I confirm that quotations from the interview can be used in the final research report and other publications. I understand that these will be used anonymously and that no individ- ual respondent will be identified in such report. | | | | |
| Signature: | | Date: | | |
| Name in block letters, please: | | | | |

**FIGURE 9.1** EXAMPLE OF AN INFORMED CONSENT FORM (ADAPTED FROM ARKSEY AND KNIGHT, 1999)

**TABLE 9.6** ACTION THAT CAN BE TAKEN FOR CONDUCTING AN ETHICAL INTERVIEW

**Ethical issue Actions**

Promises and State what the interviewee will gain

guarantees Ensure that if a copy of the report is promised, it is delivered

Risk assessment Consider in what ways might the interview put people at risk in terms of: Stress

Hostility from line-managers, peers, etc

Confidentiality Reflect on the extent to which promises of confidentiality can *actually*

be met.

Organizational Consider whether you have the ‘right’ to interview respondents permissions Are permissions necessary?

Data access Evaluate who has the right to access data and for what purpose. and ownership Who ‘owns’ the final report in terms of intellectual property rights?

Mental health Consider how interviewer and interviewee mental health may be affected by conducting the interview

Advice Appoint an adviser on ethical matters during the course of the study

*Source:* Adapted from Patton, 1990

**ETHICAL ISSUES**

The central ethical issue surrounding data collection through interviews is that participants should not be harmed or damaged in any way by the research. If a respondent becomes anxious or upset during the course of an interview, the session should be immediately abandoned.We have already seen that confidentiality should be offered to respondents when completing questionnaires, so, clearly, the same respect should be afforded those participating in interviews. Furthermore, interviewees have the right not to answer individual questions or to terminate the interview before its completion. It is also important that interviews are not used as a devious means of selling something to the respondent.

One of the problems is that, as Patton (1990) states:

*A good interview lays open thoughts, feelings, knowledge, and experience not only to the inter- viewer but also to the interviewee.* (Patton, 1990: 353)

After a good interview, the interviewees know more about themselves and their situation than they did before. This, in itself, may be quite therapeutic (or not as the case may be), but the purpose of research is to collect data, not to change people or opinions. A key ethical consideration is that of informed consent. In some countries, for example the USA, written consent is required even when the research is small scale or only involves structured, closed-question interviews. An example of an informed consent form is given in Figure 9.1.

Having taken steps to ensure informed consent, what are the practical con- siderations that help to ensure that an interview is ethically conducted? Table 9.6 sets out some issues and suggested ethical solutions.

Ethical issues might arise in any number of unexpected ways. For example, in dealing with particularly difficult or sensitive topics, the respondent might ask for practical guidance or advice. It should be noted that the interviewer is not a counsellor, and should avoid being drawn into this type of discussion.The proper course of action would be to offer contact details for those kinds of organization that could provide help. These would include advice bureaux, voluntary organi- zations, support networks and telephone helplines.

|  |
| --- |
| **SUMMARY**   * Interviews can be divided into five categories ranging from the informal conversa- tional to the completely structured. * The choice of approach will depend on the objectives of the research, with struc- tured interviews eliciting more quantitative data and unstructured or focused inter- views, qualitative. * The danger of bias in interviews stems not only from the type of questions asked but the way in which they are articulated by the interviewer. * Interviewing is a skill and includes the ability to build rapport with respondents while main- taining detachment, and observing and listening in order to keep control of the interview. * Be aware of some of the safety issues involved in interviewing, particularly inter- viewing people in their own homes or in isolated work situations. Use common- sense to avoid potentially dangerous situations. Carry a mobile phone and always let close confidants know where you are. * Ethical issues are of paramount importance since confidentiality may be more diffi- cult to maintain than in other forms of data gathering, such as postal questionnaires. |

**Further reading**

Arksey, H. and Knight, P. (1999) *Interviewing for Social Scientists*. London: Sage. Easy to read, but detailed and comprehensive. This book shows how to design an interview study and provides essential advice on how to conduct a successful interview.

Keats, D.M. (2000) *Interviewing: A Practical Guide for Students and Professionals*. Buckingham: Open University Press. A simple but practical guide to interviewing skills that includes the structure of interviews, interpret- ing responses, and chapters on interviewing children, adolescents, the aged and people with disabilities.

|  |  |
| --- | --- |
| **Suggested answers for Activity 9.2** |  |
| While the response does offer factual information, the question is probing for the respondent’s *feelings*, and so the response received is inappropriate. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 9.5** |  |
| 1. Clearly, because of the often personal nature of some of the discussions, single sex groups are more appropriate for the interviews. 2. Any research protocol should be simple and easy to use. It could, perhaps, take the form of a single side of A4 paper to be given to the respondent, containing the purpose of the research and a short list of instructions. Assurances of confidentiality could be given at the top of the proforma and at the end (as reinforcement). The researcher could repeat these assur- ances orally. | |

## 10 Collecting Primary Data: Observation

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Describe some of the advantages and disadvantages of the observational approach.**
* **Select an observational approach appropriate to a given research objective.**
* **Analyse and interpret observational data.**
* **Produce observational data that are valid and reliable.**
* **Use observational methods in an ethical manner.**

Observation is not simply a question of looking at something and then noting down ‘the facts’. Observation is a complex combination of sensation (sight, sound, touch, smell and even taste) and perception. A ringing sound in the office might be a telephone, an error signal from the new fax machine or the fire alarm! On hearing such a sound, we would have to use some experience from the past as a guide to interpreting it, and to give it meaning.Think of those people who have, say, lost their memories as a result of an accident, and the problems they face in their lives, re-interpreting sensations from scratch. Meanings (concepts) are stored in memory, are in people’s minds and are individual interpretations of ‘reality’. Hence, when a door is left open in the corridor, one worker may see this as a welcome way of improving air circulation in the office, while another worker (the safety represen- tative) sees this as a safety hazard if it is a fire door!

The interpretation of ‘meaning’ is one of the benefits but also potentially

one of the drawbacks of the observation method. On the positive side, observa- tion provides an opportunity to get beyond people’s opinions and self-interpretations of their attitudes and behaviours towards an evaluation of their actions in prac- tice. For example, we might ask people their views about working with the oppo- site sex and find that, through a questionnaire and a set of interviews, most state that they find this constructive and rewarding. A researcher, however, spends a month in the organization listening to conversations and observing behaviour

and finds barely concealed hostility and ‘backbiting’ among quite a significant proportion of male shopfloor workers against their female counterparts.

As we shall see, one of the drawbacks of observation is that the interpreta- tion of what is observed may be influenced by the mental constructs of the researcher (including their values, motivations, prejudices and emotions).We often ‘see’ what we want to see and disregard other phenomena that could prove important. Secondly, if stationed among those who are being observed, the researcher may begin actually to influence events. Furthermore, while the data gathered from observation are often rich in evidence, extracting themes and concepts from the data can be quite challenging.

The observational method is often associated with ethnographic methodo- logy in that it studies people in their natural settings or ‘fields’. Ethnography, how- ever, can also entail the use of other methods such as in-depth interviewing, and the analysis of personal documents.

**APPROACHES TO OBSERVATION**

Observation involves the systematic viewing of people’s actions and the record- ing, analysis and interpretation of their behaviour. Saunders et al. (2000) differen- tiate between *participant* and *structured* observation. Participant observation is largely qualitative and emphasizes the meanings that people give to their actions, while structured observation is largely quantitative and focuses on the frequency of their actions.Within each of these categories the researcher can collect the data covertly by hiding their identity, or collect the data overtly (see Figure 10.1).

***Overt and covert observation***

Overt observation is where those being observed are aware that the observation is taking place. By contrast, covert observation is where they are unaware of this. One of the arguments in favour of covert observation is that people may change their behaviour when they know they are being observed, thus threatening the validity of the results.The problem with covert observation, of course, is that it can be con- strued as unethical. Consider your own feelings – how would you feel if you dis- covered that someone, perhaps in your own organization, and, say, with the approval of management, had been observing you performing some element of your work. Douglas (1976), however, considers it legitimate to conduct covert observations since people try to obscure the truth through misinformation, evasions, lies and ‘fronts’. In practice, the extent to which participants in a research project are informed that they are being observed ranges from full disclosure to no disclosure at all, with many projects somewhere in the middle. As Berg (1995) comments, some subjects are so sensitive that it might be impossible to carry out research by any other means. It is worth noting that most communication within organizations today takes place via e-mail and that all these messages are stored and can be analysed. The laws on how this is done, and what consequences result, vary between countries, but, in a sense, covert observation is now part of our everyday lives.

**Overt observation**

**Participant observation**

Announced

participant

Announced

observer

Undercover

participant

Undercover

observer

**Non-participant observation**

**Covert observation**

**FIGURE 10.1** OBSERVATION RESEARCH ROLES

If covert observation is undertaken, it is essential that confidentiality is still respected. Hence, the names and locations of those being observed should not be revealed to any sponsor of the research. Case Study 10.1 provides an illustration of how covert observation can produce unexpected findings.

|  |
| --- |
| **Case Study 10.1 How smart is covert observation?**  A company running a Holiday Village has just introduced a smart card for its customers so that the customer can:   * Check in on arrival using the smart card without having to get out of the car. * Pre-book facilities such as bicycle hire and the hire of tennis courts. * Open their lodge door. * Use the card instead of making credit card or cash transactions.   A covert participant researcher with knowledge and expertise in smart card tech- nology enters the Village as a ‘guest’ to observe the ‘customer experience’ in using the cards. As a covert observer she is able to note some of the problems guests experience with the system including:  *(Continued)* |

|  |
| --- |
| * A court booking system that does not use real time updating, thus allowing double booking of the system. * Aspects of the system failing to be fully functional when the volume of cus- tomers exceeds capacity.   The full interpretation of systems failures depends on the researcher’s knowl- edge of computer systems and, at times, her ability to phrase questions that are deemed as acceptable coming from a fellow customer.  *Source*: Slack and Rowley, 2001 |

|  |  |
| --- | --- |
| **Activity 10.1** |  |
| Examine Case Study 10.1. Is covert observation justified here? Could the study have been conducted using overt observation with the same success?  *Suggested answers are provided at the end of the chapter.* | |

***Participant and non-participant observation***

Participant observation is a research method most closely associated with ethno- graphic methodology, and has its origins in British anthropology and the Chicago School of sociology.The central intent of this method is to generate data through observing and listening to people in their natural setting, and to discover their social meanings and interpretations of their own activities. Part of this process is the reporting of the researcher’s own experiences, feelings, fears, anxieties and social meanings when engaged with people in the field. With participant obser- vation, the researcher becomes a member of the group being researched and so begins to understand their situation by experiencing it. The researcher becomes ‘immersed’ in the research setting with the objective of sharing and experiencing people’s lives in order to learn about their symbolic world. This symbolic frame- work was first developed within a school of sociology known as symbolic inter- actionism (recall Chapter 2).

The principle behind symbolic interactionism is that people develop a

sense of identity through their interaction and communication with others. Through this interaction, a process of negotiation takes place through which they respond to others and adjust their understanding and behaviours to create a shared sense of reality. This theory stresses the dynamic nature of social interaction in which people continually change through their interaction with their environ- ment. A person’s identity is not something that is given, but is being continually reconstructed as he or she moves through different social settings. Participant observation, then, involves working or acting alongside people in order to observe

their interactions with their social environment to explore how it changes their ideas and behaviour, and even their own reflexive awareness of these changes. As Gans (1999) warns, ethnographic research of this kind usually involves months or even years of research. It is therefore costly. Hence, much participant observation tends to be in public health and medical institutions that are often supported by some of the larger funding agencies.

In undertaking participant observation one of the challenges is to maintain a balance between ‘insider’ and ‘outsider’ status. To gain a deep understanding of people’s lives it is essential that the researcher gets both physically but also emo- tionally close to them – but how then does the researcher maintain a professional ‘distance’? Achieving this is often affected by issues such as the gender, race, social class and the education of the researcher compared to that of the people being researched. Burgess (1984) also adds that age can sometimes be an issue – is it practical for researchers of more advanced years to observe youth gangs, for exam- ple? As one set of researchers put it:

*The more one is like the participants in terms of culture, gender, race, socio-economic class and so on, the more it is assumed that access will be granted, meanings shared, and validity of find- ings assured.* (Merriam et al., 2001: 406)

To remain an ‘outsider’ would be to fail to gain the kind of rapport that is needed to make this method a success. The participant observer, in a sense, needs to be both inside and outside the setting. Indeed, Merriam et al. (2001) argue that the boundaries between the two positions are not simple or clearly delineated. Being inside or outside is relative to a whole host of cultural and social characteristics and is a position that can shift over time. According to Hall (2000), the best the ethnographer can achieve is to negotiate a position in which one is in some way ‘at home’ and considered as ‘one of us’ without becoming completely immersed. Participant observation can be contrasted with research using a question-

naire where it is often not possible to verify whether people are telling the truth, or if their perceptions of their own behaviour or attitudes are accurate. In contrast, with participant observation it can be possible to interpret some of the subtleties of meaning in the data. Most organizations, for example, and particularly large ones, will contain a variety of social groups, each of which has, to a certain extent, its own norms, standards, attitudes and even culture and language. Contrast the cul- tures of those who work in the human resources department with those who work in security.Working amongst groups may reveal a whole set of norms and attitudes that would simply not emerge from more traditional research methods.

Cohen and Manion (1997), referring to the work of Bailey, suggest that participant studies are of value in that they:

* Are effective at observing non-verbal behaviour.
* Are immediate in the sense that they elicit data on events as they happen.
* Allow for a more natural relationship to develop over time between the researcher and respondent.

But, clearly, such methods are also open to criticism of bias and subjectivity.

On a slightly divergent note, the increasingly modern phenomenon of the organizational ‘whistleblower’ can also be regarded as a form of participant obser- vation. The persons who seek to investigate or publicize illegal or unethical acts may not regard themselves as such, but their aims drive them to systematically seek out information – thereby joining themselves to the research community (Vinten, 1994: 34).

***The practitioner–researcher***

A practitioner–researcher is someone who undertakes research within and often on behalf of their organization. As a researcher, then, they are in an ideal posi- tion to understand the culture, strengths and weaknesses of the organization, as well as its developing needs. If the research is sponsored by the organization, and especially if sponsored by senior management, then the practitioner researcher may often have good access to records and other information. Above all, the practitioner–researcher may have fairly open access to key decision makers in the organization. However, one of the limitations of using practitioner– researchers is the fact that they may be imbued with the organization’s ethos and attitudes and so have difficulty in adopting fresh perspectives and approaches.

One element of the practitioner–researcher approach is *action research* (see

Chapter 15). Today, it has a number of different connotations, but is mainly con- cerned with the promotion of organizational change, and the active involvement of practitioners in the research process. In a business context, it may involve man- agers in the sponsorship of research or their own participation in a research pro- ject, the aim of which is to initiate change, to learn from this process and to transfer this knowledge more generally within the organization.

***Variations in duration***

In truly ethnographic studies, social science researchers have spent, literally, years living among the people they are studying. Clearly, this is neither practical nor necessary for most business research. So, over what kind of time period should the observation take place? Patton (1990) states the obvious, that fieldwork should take as long as is necessary to get the job done. A study, for example, that set out to measure changes in staff attitudes to corporate re-structuring would have to allow for observation before, during and after the reorganization, thus taking many months, if not a number of years.

**DATA GATHERING AND RECORDING**

Before examining how researchers can gather observational data, we should first ask: what actually constitutes data? Burgess (1984), using the example of a study

**TABLE 10.1** FEATURES OF SOCIAL SITUATIONS AS A BASIS FOR OBSERVATIONAL DATA SOURCES

**Data features Features of a school**

Space Layout of classrooms and offices

Actors The people involved in the situation and their names Activities The various activities of people in the setting

Objects The physical elements present such as furniture and its position in the room Acts The actions of individuals

Events Activities such as school assemblies

Time The time sequence of the school such as lessons, breaks and lunch hours Goals The activities people are attempting to accomplish

Feelings Emotions in particular contexts

*Source*: Adapted from Burgess, 1984

in a school, provides a list of potential data sources (see Table 10.1). Any of these data features could be followed up by more focused questions dealing with each area in more detail.While there are a variety of ways in which observational data are collected, two of the most widely used are the writing of field notes and the use of more structured data collection methods.

***Field notes***

According to Bailey, field notes are ‘the backbone of collecting and analyzing field data’ (1996: 80).They are absolutely essential to the success of fieldwork, and com- prise everything the fieldworker believes to be of importance.The danger of tak- ing field notes is to fail to note a situation in the belief that it will always be recalled at a later date.The field researcher should guard against this kind of opti- mism. In general, field notes should be written up immediately following the observation. Bailey (1996) suggests that field notes develop out of an analytic process. First, the researcher must attempt to mentally capture and remember as much detail as possible: who was in the field setting, what did they look like, what did they say, how did you feel about them, etc.These constitute *mental notes*, which can be recalled latter to aid the production of *jotted notes*. Jotted notes comprise observations taken in the field that act as a kind of *aide-mémoire* for the later pro- duction of more comprehensive *field notes,* of which there are several components (as illustrated in Figure 10.2):

* *Primary observation: chronological log*. Raw data (i.e., no explanations or analysis) of observations on people, their surroundings, behaviours and conversations. Each set of field notes is dated and the time of occurrence noted. It is impor- tant to distinguish between actual verbatim quotations and approximate recall of conversations.You could, for example, put all real quotations in quotation marks and leave the general paraphrasing of conversations without such quotations.
* *Reflection and recall*. Some of these will be stimulated from jotted notes and some recalled during the process of writing up field notes. Sometimes objects or events do not seem important at the time but are then recalled when they occur again.

|  |  |  |
| --- | --- | --- |
|  | Primary observation |  |
|  |  |
|  | | |
|  | Reflection and recall |  |
|  |  |
|  | | |
|  | Pre-analysis |  |
|  |  |
|  | | |
|  | Experiential data |  |
|  |  |
|  | | |
|  | Forward planning |  |
|  |  |

**FIGURE 10.2** THE DATA GATHERING PROCESS (ADAPTED FROM ELLEN, 1984)

Memory

Photos

Video tapes

Audio tapes

Permanently written records

**DATA 2**

**Primary analysis**

**DATA 1**

**Field notes**

Jotted notes

Mental notes

* *Pre-analysis data: ideas and inferences*.Themes and insights may start to emerge. Do not try to censor yourself at this stage, but write down anything that occurs to you – even when in the field. Indeed, Burgess (1984) advises the use of wide margins for field notes so that there is space to add preliminary cate- gories. Make sure that a distinction is maintained between observational and analytical notes, even though they may be written at virtually the same time.
* *Experiential data: impressions and personal feelings*. These can often be a useful source of analytic insights at a later stage. So write down everything you can think of, including your feelings about events, people, conversations and your interpretations of your emotional reactions. These kinds of notes might be kept in the form of a diary.
* *Forward planning*. This might involve planning to revisit the field to collect missing data or to plan the next stage of the research project.

Once the field notes are completed, they can be written up along with any visual media that have been collected, such as photographs or audio tapes, and held as a permanent record. Burgess (1984) also recommends the drawing of dia- grams to show, for example, the arrangements of furniture and people’s sitting positions (especially for the recording of groups). Even at this stage, people, events or instances might be recalled that did not appear in the field notes, but which can now be recorded. This permanent written record (Figure 10.2) provides the basis for the primary analysis of the data.

What do field notes actually look like? Obviously, there are no rigid rules that define the answer. But it should be noted that too much data is better than too little. It is also usually far from clear when in the field as to which data are going to be relevant and which of little value. Hence, try to be as comprehensive as possible. Presented in Figure 10.3 is an example of inadequate field notes (left column) against a set of more detailed, descriptive notes.

Improved field notes

Inadequate field notes

The till worker served a customer but gave her scant attention.

**Date:** May 4th 2002 **Location:** Cafe Talk **Time in:** 11.15

**Time out:** 11.30

**Description:** There was a smell of fried food mixed with disinfectant. Young, white male (about 20 years of age), medium height and build, wearing staff canteen smock, short, neat, brown hair. Right ear pierced.

The till worker looked up at the customer as she approached the till, but then looked away.

He adjusted the till roll and opened and closed the cash till twice. He made no eye contact with the customer when she arrived at the till, and smoothed his hand through his hair. I felt that this was an unhygienic thing to do. I felt a sudden rush of antagonism towards him that I then tried to repress.

He began entering the price of the coffee, soup and cake into the till, stated the price and held out his hand (again no eye contact made). He gave the customer some change, said ‘Cheers’ and closed the till. He turned away from the customer before she walked away, and shouted for more change from the adjacent till.

**Things to do:** Return to Cafe Talk tomorrow to make observations of other staff and to observe their interactions with customers.

**FIGURE 10.3** OBSERVATION OF TILL SERVICE IN A BUSY STAFF CANTEEN, ILLUSTRATING INADEQUATE NOTES (LEFT) AND MORE COMPREHENSIVE NOTES (RIGHT)

|  |  |
| --- | --- |
| **Activity 10.2** |  |
| Looking at Figure 10.3, what evidence can you find of:   1. A chronological log (raw data). 2. Experiential data. 3. Forward planning.   *Suggested answers are provided at the end of the chapter.* | |

Like all note-taking, the way in which field notes are written up will depend on the researcher. Some wait until they have left the observational setting and write up their notes immediately. Others make cryptic notes during the observation and translate these later into field notes, usually as a computer file. In terms of content, field notes should contain:

* Key quotations, reproduced verbatim.
* Details of the physical appearance of inhabitants: gender, height, physical build, age, ethnicity, clothes, style of hair, appearance of jewellery, etc.
* Observation of verbal behaviours such as the verbatim text of conversations, the characteristics of the speech and the speaker (use of slang or technical language); who does most of the talking and whose suggestions are followed and whose ignored; who interrupts and who does not; the tone of the con- versation (polite, bored, hostile, formal, indifferent, etc.)
* Observation of non-verbal behaviours such as body language – facial expres- sions, body posture (arms folded in front is usually a defensive posture), how they move (confident or diffident?), length and frequency of eye contact.
* The time of events and activities.
* The alteration of names and places to assist in the promotion of confidentiality (but a list of pseudonyms should be kept so the same name can be allocated to each term used).
* The researcher’s views and feelings at the time of the observation.

In making field notes, Berg (1995) also suggests that the researcher:

* Records key words and phrases while in the field.
* Makes notes about the *sequence* of events.
* Limits the time spent in the field, since every hour will take 4 hours to write up (at least).
* Writes up full notes immediately on exiting the field. It is not worth under- taking any further observation until this is done.

The reproduction of field notes can be accomplished quite simply using a word processing program.Alternatively, you might consider using a specifically designed software program that provides facilities for data storage and later content analysis.

Having described in some detail the process of observing and writing up field notes, it is worth heeding de Laine’s (2000) words of caution. She argues that in producing field notes, the researcher brings personal meaning to the account created. In other words, field notes are not ‘raw data’ in the simple sense, but details that are sieved from all the possible data through the researcher’s mental constructs, understandings and interpretations.

|  |  |
| --- | --- |
| **Activity 10.3** |  |
| Go to a busy environment (such as a train station or supermarket) and spend ten minutes observing people in action, and listening to their conversations. During the observation make as comprehensive a set of field notes as you can, and write these up as soon as is practicable. Examine your completed field notes. Do they accurately reflect what you observed? What was the ratio between time observing and time taken to write up? | |

***Structured observation***

**The advantages of structured observation**

In contrast to the use of field notes, structured observation is more quantitative in nature. A typical example in the workplace would be a time-and-motion study where someone is observed performing a task and their actions noted on a pre- designed proforma. Structured observation has a number of distinct advantages:

* It should result in more reliable data because the results can be replicated either by the same researcher at a different time, or by other researchers.
* It allows data to be collected at the time they occur and does not have to rely on the recall of participants or their interpretation of events.
* It collects data that participants themselves may not realize are important.

Against this must be set the disadvantages that:

* The researcher must be at the place where the events are occurring and at the appropriate time.
* Only overt actions can be observed, from which often subtle inferences have to be made.

**Coding schedules**

Coding schedules are structured schemes using predetermined categories for recording observable events. They range from quite simple approaches such as a system based upon *time*, to quite complex *event* systems. Robson (1993) suggests that before a coding schedule is selected, the first phase of a structured observa- tion approach will be an exploratory one, often using other techniques such as interviews or questionnaires.

Coding schedules can be developed by the researcher (an onerous task) or use made of existing schedules. A common time scheme, the Flanders interaction analysis (IA) system, has been widely used in educational research for many years to illustrate the interaction between teachers and pupils. In Table 10.2 the Flanders system has been adapted for a situation where interaction is taking place between

**TABLE 10.2** FLANDERS INTERACTION ANALYSIS SYSTEM

**Categories**

1. **Manager accepts subordinate’s feelings**. Accepts and clarifies an attitude or the feeling tone of a subordinate in a non-threatening manner. Feelings may be positive or negative. Predicting and recalling feelings are included
2. **Manager praises subordinate***.* Praises or encourages subordinate’s action or behaviour. Jokes that release tension, but not at the expense of another individual; nodding head, or saying ‘mm hm?’ or ‘Go on’ are included
3. **Manager uses subordinate’s ideas***.* Clarifying, building or developing ideas suggested by subordinate. Manager’s extensions of subordinate’s ideas are included but as the manager brings more of his/her ideas into play, switch to category 5
4. **Manager questions***.* Asking a question about content or procedure, based on manager’s ideas, with the intention that the subordinate will answer
5. **Manager discusses***.* Manager gives facts or opinions about content or procedures; expresses own ideas, gives own explanations, or cites an authority other than the subordinate
6. **Manager gives directions***.* Directions, commands or orders with which the subordinate is expected to comply
7. **Manager criticizes subordinate**. Statements intended to change subordinate’s behaviour from non-acceptable to acceptable patterns; bawling someone out; stating why the manager is doing what she/he is doing; extreme self-reference
8. **Subordinate response**. Talk by subordinate in response to manager. Manager initiates the contact or solicits subordinate’s statement or structures the situation. Freedom for subordinate to express own ideas is limited
9. **Subordinate-initiated response***.* Talk by subordinate that they initiate. Expressing own ideas; initiating topic; freedom to develop opinions
10. **Silence and confusion***.* Pauses, short periods of silence and periods of confusion which cannot be understood by the observer

*Source*: Adapted from Flanders, 1970: 34

work-based employees. This could be on the basis of peer group interaction, for example, a project team working on the development of a new software system, or a manager–subordinate interaction. Table 10.2 provides an example of the latter.

In using the Flanders system an interval coding system is used where a code is selected for every three seconds of interaction. Figure 10.4 illustrates a typical coding sheet, showing that, so far, three minutes of interaction have been logged, with a code number noted for every three seconds. In the first minute, it can be seen that most of the conversation is led by the manager either making comments

(5) or giving directions (6). In the third minute, the manager asks a question (4), the subordinate responds (8), and the manager criticizes this response (7).

The Flanders interaction analysis system is an example of an *interval* coding scheme since data are collected at pre-determined time periods. Other categories

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | 5 | 5 | 5 | 5 | 5 | 9 | 9 | 9 | 9 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 5 | 5 | 9 | 9 |
| **2** | 7 | 7 | 7 | 4 | 4 | 4 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 5 | 5 | 5 | 5 | 5 |
| **3** | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 7 | 7 | 7 | 7 | 5 | 5 | 5 | 5 | 9 | 9 | 9 | 7 | 7 |
| **4** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **5** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**FIGURE 10.4** ANALYSIS OF DIALOGUE BETWEEN MANAGER AND SUBORDINATE USING THE FLANDERS INTERACTION ANALYSIS SYSTEM

of coding scheme include *event* coding when a tally is made only when an event occurs. Figure 10.5 illustrates alternative ways in which this can be done. In

(*a*) we have a simple array of events labelled 1 to 3.When each event occurs, it is tallied. Hence, we can see that event 2 occurred more frequently than event 3. Knowing the number of times an event occurred is often enough. In (*b*) the sequence record gives us not only how often an event occurred, but the sequence of events. This can often be more useful at the analysis stage than knowing the simple frequency. The sequence record on timescale (*c*) adds a further layer of detail, showing not only how often events occurred and their frequency, but also the time intervals between these events.

**THE PROCESS OF OBSERVATION**

***Getting in***

One of the greatest problems with the observational method is that of actually *get- ting into* the research setting. Bailey (1996) argues that one of the ways to gain entry is through building relationships with gatekeepers, individuals who play a key role in either granting or denying access. Formal gatekeepers include man- agers, directors, head teachers, chief administrators, etc., while informal gatekeepers do not have institutional power, as such, but exert an influence over the research setting. Gatekeepers dictate when the researcher can enter the setting, who is talked to and what can be observed.The gatekeeper is not necessarily the highest person in authority. Indeed, relying on such a person might negatively influence the attitude of the real gatekeepers lower down in the social hierarchy of an organization.

Negotiating access with gatekeepers is a vitally important process and one

that affects the rest of the study. It will often be necessary to negotiate collabora- tion with more than one gatekeeper and to re-negotiate access on a continual

1. ***Simple checklist***

|  |  |  |  |
| --- | --- | --- | --- |
| **Event** | 1 | 2 | 3 |
|  | *I I I* | *I I I I* | *I* |

1. ***Sequence record***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Event** | 2 | 2 | 1 | 3 | 1 | 1 | 1 | 2 | 3 |

1. ***Sequence record on timescale***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Elapsed time (min)** | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
| **Event** | 1 | 2 | 3 2 2 | 1 | 1 2 | 2 | 1 |

**FIGURE 10.5** ALTERNATIVE WAYS OF EVENT CODING

basis. Bailey (1996) warns that these negotiations can often be affected by issues of gender, race, age or sexual orientation. For example, a heterosexual woman who wants to observe a lesbian reading group might be welcomed by some groups but not by others. It will certainly be easier to gain entry if the researcher has empa- thy with those being studied.This does not mean necessarily agreeing or disagree- ing with them, but it does mean avoiding the adoption of judgemental attitudes. Patton (1990) suggests that a reciprocity model of gaining entry is valuable, where both researcher and participants come to see mutual advantages emerging from the observational process. This, of course, may be a pious hope. As Hall (2000) points out, especially when working with disadvantaged groups, an outsider’s curiosity might be construed as objectionable and patronizing – the first few weeks of field- work can sometimes be a miserable experience for the researcher.

Getting in, though, is helped by getting to know the routines and rituals of

the target audience. For example, sometimes ‘guides’ can help to smooth the pas- sage of the researcher into the organization or group. Guides are indigenous workers within the location to be studied or are people who can vouch for the trustworthiness of the researcher and the value of the research. If the guide’s role turns out to be rejected by the hostile attitudes of the group, then this role can be snowballed to another person, recommended by the original guide.

***Informed consent***

Informing people in the research setting of what you are doing, and eliciting their consent, is seen as good practice by most researchers. Diener and Crandall (1978) suggest that fully informed consent should include:

* Describing the overall purpose of the research.
* Telling the participants about their role in the study.
* Stating why they have been chosen.
* Explaining the procedures, including the amount of time required.
* Clearly stating the risks and discomforts.
* Stating that the participants may withdraw at any time.

As we saw in Chapter 9 (recall Figure 9.1), getting participants to sign a consent form is also prudent.This, of course, implies that covert observation cannot be under- taken. Bailey (1996) argues that achieving a cooperative relationship with a group more than compensates for what is lost through reactivity (between researcher and those being researched). However, the impact of the researcher’s presence and interactions needs to be reflected in field notes and analysis. Note that even after permission has been granted it can be withdrawn at any time and that this must be respected. Of course, there are often circumstances when informed consent is simply impractical. Burgess (1984) notes that in research in public settings (sports events, parents’ evenings, church services, etc.) access cannot be negotiated with every participant.

***Becoming invisible***

The researcher may become ‘invisible’ due to the length of time they are involved in the project, by immersing themselves into the norms and behaviours of the group being studied, or simply by hiding the fact that they are researchers.As Berg (1995) points out, however, there are reasons why invisibility is a danger. If, for example, you go ‘undercover’ to research, say, criminal activities within an organi- zation, you need to ensure that you do not become implicated yourself ! On the whole, though, invisibility means that participants cease to be consciously aware of the researcher’s presence, and therefore act more naturally.

***Building rapport***

Assuming that you adopt an overt observation strategy, then it is important that you begin to build rapport, established on ‘relationships that ideally are emotional and personal, not formal and hierarchical’ (Bailey 1996: 60).There can be no hard and fast rules about how rapport is established since this very much depends on the interactions between the researcher and those in the field setting. But being honest, friendly and open is probably the best place to start. People tend to respond when interest is shown in them. Of course, the opposite also applies.The moment people believe that the researcher has been dishonest or manipulative all trust will evaporate and will be almost impossible to re-establish.

***Handling identity***

In all aspects of research where the researcher is in direct contact with informants, the personal identity of the researcher will affect research practice. Given the close

proximity and often the length of time spent in the field, this is particularly true of participant observation. Elements such as gender (often the main focus of con- cern), age, social class, race and religion are all important identifying factors. A problem, for example, of being a female researcher in male-dominated environ- ments is that the researcher sometimes becomes treated as a sex object. In ethno- graphic research

*young female ethnographers can be subject to sexual hustling, fraternity and paternalistic atti- tudes from male respondents, and treated as gofers, mascots or surrogate daughters.* (Brewer, 2000: 100)

One of the advantages of being a female participant observer is that women often tend to explore issues, including gender issues, that would often be glossed over by their male counterparts. Similarly, it may be easier for a young researcher to work with youth gangs, although this is not to rule out the possibility of older researchers managing to build rapport.

***Observing and learning***

It is impossible to observe everything that takes place in a situation, so it helps if the researcher is able to partition activities to focus on key areas. For example, in researching customer behaviour at an international airport, the researcher might select particular locations or subgroups of customers for study. Observation might be conducted by personally mingling with the subjects, but, equally, might occur through filming or videoing activities or viewing the results of closed circuit tele- vision monitoring. If the observation is ‘live’, Berg (1995) suggests some strategies for collecting data:

* Take in the physical setting by visiting the environment that people will be observed in. This allows an opportunity to get acquainted with the target group, and drawing up first impressions and points of reference. Fetterman (1989) refers to *outcropping*, the unobtrusive measures that protrude or are visi- ble in the field setting. These could include buildings, graffiti, the smell of urine in city streets, litter or a park full of trees in blossom.
* Develop relationships with inhabitants. We have seen that guides may help here, but whether they are available or not, it is important to strike up a rap- port with the inhabitants. If the observation is announced, it is sensible to pro- vide a brief description of the purpose of the research, but it is best to avoid technical details. It is also wise to provide assurances of confidentiality at an early stage, and perhaps to possess a letter of introduction supporting the pro- ject.A key objective will be to quickly establish relations beyond that with the guides.
* Track, observe, eavesdrop and ask questions. Tracking comprises following guides around their daily tasks, and watching their activities and interactions with others. Eavesdropping can offer opportunities for picking up vital new

**TABLE 10.3** EXAMPLES OF WHAT TO OBSERVE WHEN ENTERING FIELD SETTINGS

**Subject Comments**

Lighting Lighting conveys social meaning, and may influence the way in which individuals interact with the setting and with each other. For example, loving couples prefer subdued lighting, sports people usually bright, specialist lights

Colour Colours help create a mood. Are they garish, bold, soft, well coordinated?

What purpose might they serve?

Smell What does the smell convey: food, pets, children, cars, chemicals, cleaning fluids? Does it have the scent of a family home, business, hospital? Sense for smells early on entry to the setting because people adjust to smells after time

Sound What sort of sounds are there: machinery, cars, crying babies, bird song, music? Do people react to the sounds or are they ignored? Are the sounds used to convey information? Does the volume of sound rise, fall or stay con- stant? Like smell, be aware of sound early on entry as the ability to detect sounds falls with exposure

Objects Pay attention to objects such as: furniture, computers, machinery, tools, books, pictures and other decorations. Are the objects in good or poor condition? What sort of ‘statement’ do the objects make? What do they convey in terms of status?

Weather and Note any relationship between temperature and moods and behaviours. Are temperature there more people on the neighbourhood streets when it is hot?

*Source*: Adapted from Bailey, 1996

data, but one problem may be understanding the language used, especially if the information is couched in the jargon or technical language of the organi- zation, location, or neighbourhood.

* + Locate sub-groups and ‘stars’. Sub-groups may exist on the basis of personal

relationships, job roles, or mutual interests, and may contain central figures or stars. Locating stars and establishing good relationships with them may be important in opening doors and soliciting the cooperation of the group. However, as Patton (1990) points out, organizations may be rife with political conflicts between various groups and sub-groups.This may sometimes lead to a group trying to align itself with the researcher as part of its conflict with other groups.

But it is not just a question of how to conduct an observation but *what* to observe. Table 10.3 offers some suggestions.

You will probably have noted when looking at Table 10.3 that a consider- able amount of observation also includes interpretation. If, for example, you notice a particularly high specification desktop computer, you might assume that the person sitting behind it was of a high status. But there again, you might be entirely wrong.The owner might be off sick and the person sitting at the desk, a temporary worker.The next Case Study illustrates this point.

|  |
| --- |
| **Case Study 10.2 The impact of gaudy colours**  A researcher conducted some observational research in a home for elderly people. One of her strong initial impressions was the paint-work – lots of strong colours such as red, black and orange. She found the colours gaudy and reported in her field notes that they made her feel ‘jumpy’. However, as she spent some time in the home she learned that the ageing process means that we become less able to distinguish softer colours. Hence, the bright colours were needed by the elderly residents for them to be able to see and enjoy them. When interviewed, the resi- dents stated that they liked the colours.The researcher was able to reflect that it is important not to base interpretations only on her own reactions to phenomena.  *Source:* Adapted from Bailey, 1996 |

|  |  |
| --- | --- |
| **Activity 10.4** |  |
| Carry out a small-scale exercise with a fellow researcher. Select a place to conduct an observation. It could be a restaurant, library, park, etc. Spend about 20 minutes during which time you both take field notes using the crite- ria in Tables 10.1 and 10.3. Leave the field setting and complete your field notes. Working independently, begin to interpret your notes. When you are both ready, compare your interpretations. How similar are they? What do you disagree about? What has caused this difference in interpretation? Are either of you willing to re-interpret your data on the basis of the discussion? What evidence would you base this re-interpretation on? | |

***Getting out***

When to leave may have been planned early on in the project or it might result from the ‘things to do’ portion of field notes getting ever smaller, or when fewer insights are emerging. Leaving the field of observation involves both the physical and emotional disengagement of the researcher.This is particularly the case if the observation has been conducted over a lengthy period of time and the researcher has developed empathy and commitment to the inhabitants. Prior to disengage- ment, the researcher should warn the community of members that this exit is imminent.The withdrawal is probably best handled in a series of stages.

**VALIDITY AND RELIABILITY ISSUES**

***Validity***

With internal validity, given the often high degree of personal interpretation in observation, it may be difficult to prove conclusively that the data gathered are

sufficiently objective to represent a true reflection of events. This, however, may be assisted if the researcher is able to display a sound understanding of the orga- nization or context being researched because she or he actually works in it. In other words, they are a practitioner–researcher (see Chapter 15).

In the case of external validity, the very individuality of some observations may make it difficult to generalize the findings to other situations. Many obser- vational research projects take the form of case studies and, as such, suffer from all the problems of generalization normally associated with the case study approach, one being small sample size.While Brewer (2000) concedes that it is essential not to exaggerate the generalizability of findings obtained from one or two fields, this does not mean that generalization should be ruled out. Cases, for example, can be carefully selected on the basis of their potential for being representative of the population (so the researcher must be aware of, and have access to, multiple field sites). Secondly, cases can be studied in one field that are similar to cases in another, or a series of longitudinal studies can be taken to build up a historical, comparative perspective.

Claims for generalizability are also strengthened if the researcher is able to stay in the field long enough to observe or experience the full range of routines and behaviours that typify the case. If this is not practically possible, then time sampling becomes necessary, in which all activities are recorded during a specified period.This should allow the observer to identify frequent routine activities, and irregular events that are special or abnormal.

Brewer (2000), however, argues that ethnographic research (which includes participant observation as a prime data gathering method) needs to go beyond issues of validity. It must also be relevant to issues of public concern.

*Ethnographic research could be judged on whether and how well it resolves some social problem, or achieves emancipation for some oppressed group (such as women) or release from some con- straining situation or setting (such as discrimination experienced by ethnic minorities*). (Brewer, 2000: 49)

Hammersley (1992) also argues that, while validity and reliability are important issues, they are not sufficient. In considering the value of a study, plausibility and credibility must also be taken into account. In writing reports, researchers have the duty to present sufficient evidence that may convince an audience – given the existing state of knowledge.The more central a claim is to the core arguments of the research, the greater the breadth and depth of evidence that must be provided.

***Reliability***

As we have seen, one of the problems with observation is that different researchers may see different objects, phenomena and human behaviours when observing the same event. Similarly, each researcher may give different interpretations of an event when seeing it on different occasions. One way of reducing this unreliability is to record the observed events in some way so that the data can be reviewed

and, if necessary, re-interpreted. The recording of data through an exact notation system is important here because it reduces the danger of human error in the recall of events. Experienced researchers tend to keep very comprehensive notes, as some details that appeared hardly relevant at the time of the observation may later prove to be crucial.Again, reliability will be increased by this more structured process.

Another way of improving the reliability of a study is through the process of *triangulation*, that is, the use of multiple methods of data collection. Triangulation is a word drawn from the world of surveying where measurement is taken from three or more different points in order to identify a particular area with accuracy. According to Begley (1996) triangulation comes from a positivist frame of reference, which assumes, as we have seen, that a single reality or ‘truth’ can be found. But this does not mean that only quantitative data are relevant. Both quantitative and qualitative data can be combined to form a coherent picture.

In principle, then, triangulation reduces sources of error by gathering data from multiple sources, or using a variety of methods or theoretical approaches. But while it may reduce the chance of error, it does not eliminate it. Indeed, using a number of inappropriate data gathering methods, or using more than one badly trained observer, does not improve research reliability! So, just as in the selection of one research approach or method, using multiple methods still requires making them congruent with the research questions being asked. As Begley (1996) puts it:

*Unfortunately, many neophyte researchers ‘use triangulation’ without either explaining or rationalizing their decisions, seeming to expect that the mere fact that they are utilizing this approach will magically solve all problems of bias, error and invalidity.* (Begley, 1996: 127)

**DATA PRESENTATION**

In contrast to other research approaches, observational research (particularly if it is ethnographic) does not leave the writing up of results to a later stage – it is an ongoing process right from the start.This permits the researcher to interact with the data, to expose gaps in knowledge and identify where further investigation is required. Important issues in the presentation of data include: what to write, how to write it and what kinds of claim can be made for the status of the account.

***What to write***

There can be no prescriptive rules on this, but accounts could include:

* The context of the study (physical setting, history, etc.).
* The number of participants.
* The activities taking place.
* The division of labour and hierarchies.
* Significant events.
* Member’s perspectives and meanings.
* Social rules and basic patterns of order.

Quotations should be used to provide the reader with an opportunity to verify some of the claims made in the report, but should not be too numerous as to be intrusive. Reports can also include photographs, charts, leaflets and other visual media.

***Writing for the audience***

We will look at some of the essential skills of report writing in Chapter 14, so these will not be examined in any detail here. For reporting on observational research, all the basic rules of report writing stand: use language that the audience understands, engage the reader’s interest through the use of rich, vivid descrip- tions, and make connections from data analysis to the theory clear.

***Determine the status of the writing***

Researchers, and particularly ethnographic researchers, are divided as to the level of credibility they should assign to their report.Those who adhere to more posi- tivistic traditions tend to argue for the authenticity of their research as a reflection of ‘how it really is’ in the field. Postmodernists, of course, challenge this view, argu- ing that any version of events is just one amongst multiple perspectives and inter- pretations. In extreme postmodern accounts, ethnographers even hold back from interpretation, allowing the text to ‘speak for itself ’.

**ETHICS IN OBSERVATIONAL STUDIES**

While we have raised ethical concerns in looking at the use of other research methods and instruments, ethical issues are certainly no less important here. For one reason, researchers are in much closer proximity with the subjects of the research – the ‘moral community of their hosts’ (Ellen, 1984: 138) – and often for longer periods than with most other approaches. In the case of ethnographic observation, researchers are unique in actually sharing the lives of those they are researching. In the case where this observation is being conducted covertly, some quite acute problems and issues can arise.

One of the justifications for covert observation is that, by omitting informed consent, it ‘protects’ subjects from any of the potentially negative effects of knowing that they are being observed.This might include apprehension or ner- vousness. Another argument is that all researchers assume a ‘variety of masks’ depending on where they find themselves, so covert observation is no different. The notion of ‘net gain’ is cited, whereby the benefits of the research outweigh

the risks of the covert method. Diener and Crandall (1978), however, point out that the costs and benefits of research are often both impossible to predict and difficult to measure. Herrera (1999) also has little sympathy with the net gain argu- ment, suggesting that some subjects may discover their involvement and might be disturbed by the revelation – not least that they learn of their own naivete. It is probably best if covert methods are only used where there is no alternative, such as where gatekeepers impose impossible barriers or where access is closed.

To advise and guide researchers through this ethical and moral maze, most professional associations that concern themselves with research draw up ethical codes of conduct. If a researcher is commissioned, sponsored or provided with access to a site through one of these associations, then she or he will be required actually to sign up to the code.The British Sociological Association’s statement of ethics, for example, provides guidelines on:

* *Professional integrity*. Members should seek to safeguard the interests of those involved or affected by their work. They should recognize the boundaries of their own competence and not accept work they are not qualified to carry out.
* *Relations with and responsibility to research participants.* The physical, social and psychological well-being of participants should not be adversely affected. Participation should be on the basis of informed consent, and participants should understand how far they will be afforded anonymity and confidentiality. Special care must be taken when dealing with groups that are vulnerable by virtue of age, social status or powerlessness. If research is covert, anonymity of participants must be protected and, if possible, informed consent obtained post hoc.
* *Relations with and responsibility towards sponsors and funders.* The obligations of sponsors and researchers should be clarified in advance of the research. Researchers should not accept conditions that are contrary to their profes- sional ethics or competence. During the research, sponsors or funders should be informed of any departure from the terms of reference.

|  |  |
| --- | --- |
| **Activity 10.5** |  |
| For a more detailed description of ethical guidelines see the British Sociological Association’s website at:  <http://www.britsoc.org.uk/about/ethic.htm>  Also take a look at the ethical guidelines on covert observation for the National Health and Medical Research Council of Australia at:  <http://www.nhmrc.gov.au/publications/humans/part17.htm> | |

Our final Case Study illustrates an actual use of covert observation (both partici- pative and non-participative within the same study) and the uses of multiple sources of evidence.

|  |
| --- |
| **Case Study 10.3 The role of observation in market research**  In certain situations, observation is the only way of obtaining information on customer behaviour, especially where the influences on that behaviour are sub- conscious. A study was undertaken to develop guidelines for the siting of middle- market restaurant outlets, in order to maximize the number of potential consumers passing by at lunch-times.The location was three interconnecting streets in a sub- urb of South London. The study was in two stages. First, an observation of con- sumer movements around the high street. Secondly, a series of visits to the restaurants as covert observers during the lunch period.  In Phase 1, a range of factors was assessed to see if they had any influence on consumer traffic flows in general and on restaurant usage.These included: the curve of the road, the sunny side of the street, pedestrian crossings, public transport sites, the gradient of the street, and the types of shops in the vicinity of the restaurant. Counts of consumer traffic were conducted for 15 minute periods, focusing on strategic areas such as those near pedestrian crossings, the top and the bottom of the hill, near banks with cash withdrawal facilities, etc.  During Phase 2 the restaurants in the study were visited four times at lunch- time and detailed notes taken of customers using classifications such as: types of customer (individuals, couples, families, similar age groups), dining purpose (busi- ness, family treat, celebration, romantic one-to-one); style of dress (formal or casual); mode of transport (walk, taxi, car, bus, etc.). By analysing the types of cus- tomer in the restaurant, it was then possible to assess if there was a positive rela- tionship between the type of customer on the streets and the type of customer in the restaurants. In other words, the study was assessing whether the restaurant was situated in the right place.  It was found that, to maximize the flow of potential customers going past the restaurant at lunch-times, the outlet ought to be situated: on a central site rather than at the far end of the high street, on the sunny side of the street, on the inner rather than the outer curve of the street, and near transport links appropriate to the outlet’s key market segments (customers).  *Source:* Adapted from Boote and Mathews, 1999 |

|  |  |
| --- | --- |
| **Activity 10.6** |  |
| Examine the observational design in Case Study 10.3. Could the data gather- ing have been done in any other way? How effective would this alternative method have been in terms of the validity of the data. What dangers are there of observer bias in the study and how could they be controlled for?  *Suggested answers are provided at the end of the chapter.* | |

|  |
| --- |
| **SUMMARY**   * Observation is more than just ‘seeing’; it also involves complex combinations of all the senses and the interpretation of observed events. * Observation can be overt or covert and involve the active participation of the observer or non-participation. * One of the challenges of the observational approach is the gathering of data, par- ticularly if the observer is a covert participant. * Field notes should be as comprehensive as possible and should be taken either as events are observed or as soon as possible afterwards. * Observational methods will often be triangulated with other research approaches, such as interviews and questionnaires. * For structured observation, coding schedules will be used based on the principle of either noting events over a period of time or noting when an event occurs. * Ethical issues arise, particularly where covert observation is being used. Researchers may do well to make use of a code of ethics drawn up by the relevant professional body, if such a code exists.   **SUMMARY OF WEB LINKS**  <http://www.britsoc.org.uk/about/ethic.htm> <http://www.nhmrc.gov.au/publications/humans/part17.htm> |

**Further reading**

Bailey, C.A. (1996) *A Guide to Field Research.* Thousand Oaks, CA: Pine Forge Press. Not only is it clearly written, this book contains a host of valid and informative examples of practical experiences in the field.

Brewer, J.D. (2000) *Ethnography.* Buckingham, Philadelphia: Open University Press. Although the focus is on ethnography, this book provides plentiful advice and comment on designing observational studies, data collection and ethics.

Pink, S. (2001) *Doing Visual Ethnography.* London: Sage. Explores the poten- tial of photography, video and hypermedia in ethnography and social research. Provides a reflexive approach to practical, theoretical and methodological issues.

|  |  |
| --- | --- |
| **Suggested answers for Activity 10.1** |  |
| Covert observation can be justified because it allows the researcher to ‘get close’ to the situation and to identify where customers are really having diffi- culties. If the observation was overt, then customers might act in ways that might hide or obscure their inability to cope with some aspects of the system. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 10.2** |  |
| 1. Most of the data here take the form of a chronological log, that is, direct observations. 2. The experiential data comprise the more personal reflections of the researcher, beginning with ‘I felt …’. 3. Forward planning is contained in the ‘Things to do’ section. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 10.6** |  |
| Certainly, data could have been collected in other ways – for example, through a market research survey of customer attitudes to the sighting of the new restau- rant. But would the return rate be adequate? Would the responses be honest? With observations, however, one of the dangers is observer bias. One way of controlling for this is through the use of multiple observers, who would each observe independently and then compare both their raw data and analysis. | |

## Collecting Primary Data: Unobtrusive Measures

**11**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Distinguish between unobtrusive measures and other research approaches.**
* **Describe the advantages of unobtrusive measures over more interactive methods.**
* **Select between different unobtrusive measures for conducting research.**
* **Demonstrate how to access data archives on the Internet.**

So far, we have concentrated on interactive research methods such as surveys, case studies, interviews and observations. Unobtrusive measures, however, involve the use of non-reactive sources, independent of the presence of the researcher, and include documentary evidence, physical evidence and archival analysis. The term archive derives from the ancient Greek *aekheion*, which means a house that is the residence of the superior magistrates, the *archons*, those that command.This house was where official documents were stored and where the *archons* acted as both guardians and interpreters of the documents. Here, the principle was created that archives require that documents are stored in one place (Featherstone, 2000).

These archives exist in a wide variety of formats and can consist of files, maps, drawings, films, sound recordings and photographs. While libraries tend to provide access to published materials, archives hold unique unpublished records. But, as Sleeman (2002) points out, with the growth of electronic environments such as the Internet, what is ‘unique’ and ‘published’ or ‘unpublished’ is increasingly blurred. Web pages, for example, can contain links to many other sites or pages, challenging the notion of a document as an integral and independent record.

As we have seen, interactive measures carry with them various inherent problems, such as the dangers of interviewer bias, the possibility of research tools of questionable validity and reliability, or reactivity between the interviewer and interviewee. Unobtrusive measures, because they are dealing with ‘dead’ data, in principle, are unlikely to face the risk of reactive measurement effects.

But, as we shall see, unobtrusive measures pose other risks if used on their own. Some materials, for example, tend to survive better than others, so their rep- resentativeness is open to question.To ensure reliability, it is often prudent to use unobtrusive measures in conjunction with other approaches.

In this chapter we will look at various kinds of unobtrusive measures and how they can be of value to the researcher. We will then examine a number of typical sources of unobtrusive measures.

**PHYSICAL MEASURES**

From the prehistoric cave paintings of early man to the Great Wall of China, medieval cathedrals or the discarded fast food containers of modern times, human beings have left behind physical evidence of their existence.According to Webb et al. (1966), these physical or *trace* measures can be divided into four broad categories: natural and con- trolled accretion measures, and natural and controlled erosion measures.

***Natural accretion measures***

Accretion takes place where there is a build up of deposits of materials or evi- dence. Within the context of ancient worlds, for example, this could include the accumulation of shards of pottery. In a more modern context, it could include the build up of piles of litter, or, say, the amount of dust gathering on some files or equipment, showing how little they are being used. An often-quoted example is that of graffiti appearing on the surfaces of (usually) urban features such as walls or buildings. Lee (2000) provides examples of research where graffiti have been used to analyse relationships and attitudes between different ethnic gangs, and how the graffiti delineated certain ‘zones of tension’ between groups.

But accretion measures could also include more innocent examples, such as the number of plastic cups accumulating in waste bins around an office. We are not interested, however, in these materials for themselves, but for what they might reveal about aspects of human behaviour. In the case of the plastic cups, we could use them to come to a tentative estimate of the number of breaks taken by office workers, as the following Case Study shows.

|  |
| --- |
| **Case Study 11.1 Natural accretion measures – cold coffee!**  After trades union pressure, an office manager agrees to install a vending machine for hot and cold drinks. After only a month, through casual observation, he becomes concerned that the vending machine is encouraging a ‘take a break’ men- tality, and that too many staff are losing focus on their work. He decides to carry out a short study to see if his hypothesis is correct.  *(Continued)* |

|  |
| --- |
| He first of all notes where people consume their drinks, and finds that there are two areas: at the vending machine itself, which has now become a sort of social area, and at people’s personal desks. Using unobtrusive measures, once staff have left work at the end of the day, he goes around the office, collecting used plastic cups from the waste bins. He finds over 50 cups in the bin next to the vending machine, but a total of over 200 in individual staff bins.  The next day, he covertly observes six members of staff consuming their drinks to make an average estimate of the time they spend on each break. In doing this, however, he finds that it is only those people who congregate around the vending machine who actually stop to talk.Those who take their drinks back to their desks continue immediately with work, taking a drink when they can. Indeed, he now recalls that when he delved into individual waste bins the previous evening, many contained grey-brown slops in the bottom.This is another unobtrusive measure – the fact that many staff had been so busy, their tea or coffee had gone cold and had to be poured into the bin! Since these people are clearly working rather than tak- ing a break, the manager concludes that the vending machine is probably increas- ing productivity, not reducing it. |

|  |  |
| --- | --- |
| **Activity 11.1** |  |
| Take another look at Case Study 11.1.   1. What evidence is there that the manager used a triangulation of methods? 2. How accurate would the study have been if the manager had only used unobtrusive measures? Would the data have been reliable if he had con- ducted the research using, say, an interview schedule?   *Suggested answers are provided at the end of the chapter.* | |

Another example of natural accretion measures comes from Patton (1990), who refers to Palmer’s study of letters and remembrances laid at the Vietnam Veterans Memorial. She took samples of material left at the memorial and then located and interviewed the people who had left it.The combination of both the materials and the interviews allowed a powerful analysis to be written of the effects of the Vietnam War on the veterans who had survived it.

***Controlled accretion measures***

This is where the researcher tampers with the materials that are connected to the accretion comparison. Webb et al. (1966) give the example of researchers who tested advertising exposure using the ‘glue-seal method’. Here, a small glue spot was inconspicuously placed between the pages of a magazine close to the binding. After the magazine had been read, the researchers could detect, by noting whether

the seals had been broken, which pages had been opened fully and looked at and which had not.This method was developed because of the tendency in question- naire surveys for respondents to falsely claim they had read or viewed an adver- tisement. But as Webb et al. note, this controlled accretion measure is rather limited in its effectiveness. It does not, for example, allow researchers to determine precisely which advertisement was seen, only which pair of pages. It also yields no data on how long an advertisement was looked at, or indeed, if it was actually viewed at all.

A more modern example of controlled accretion is the use of the Web. Many organizations make use of a web counter to keep a tally of how many ‘hits’ they are receiving on their website. Sophisticated software is also now available to provide data on how long a person stayed on the site, which pages they viewed, and whether the hit came from inside or outside the organization.Where a com- pany has a website that contains information that people may genuinely want (reports, articles, economic or business data, etc.), then it can grant access to the site only through visitors having to complete an online proforma about them- selves.The company can now develop a detailed profile of its potential customers that it then targets with its marketing materials.

***Natural erosion measures***

Here, there is a degree of selective wear or deterioration on the material being studied. For example, examining the wear and tear on office carpet tiles may reveal the density of human ‘traffic’ in a particular section of a library. Similar deteriora- tion in a department store might reveal the location of the most popular goods. Observation (see Chapter 10) might also be used to confirm these findings.

If, for example, you wanted to discover the most popular resources used by learners in an organization’s Open Learning Centre, a sensible approach would be to check the records of how often a book, video or CD-ROM had been bor- rowed. But this is only an indirect measure, since it tells us nothing about the extent to which the resource has actually been used. Here, unobtrusive natural erosion measures could be used, checking the wear and tear on the learning mate- rials. So, we could compare how many times page corners had been turned down on different study guides and handbooks. Playing some of the Centre’s training videos might soon reveal which ones seem rather worn out. One problem, of course, is that with the move towards digital technology, such signs of wear and tear will be virtually impossible to detect.

***Controlled erosion measures***

In this case, it is possible to use or manipulate the extent to which something wears out against some other experimental variable. Say, for example, a company hired people to distribute its leaflets door-to-door around neighbourhoods. How does it know that the leaflets are being delivered? Using controlled erosion measures

it could estimate the rate at which the distributors’ shoes wore out, by taking a measurement of sole depth before they started the job and, say, after 3 months. Of course, there are many potential intervening variables here, not least of which is the extent to which staff used their shoes during their leisure time. The answer here would be to issue ‘company’ shoes so that this could be controlled for.

**DOCUMENTS: RUNNING RECORDS**

Documents are some of the most frequently used unobtrusive measures and include a wide variety of organizational and institutional documents, and state financial, political and legal records.

***Organizational documents***

Running records are described by Webb el al. (1966) as the records of society, such as actuarial records, voting records, city budgets and communication media. Hakim (1993) also points to health service records, school records, membership records of trade unions and voluntary associations, records of births, deaths and marriages, police, court and prison records. Such records tend to be updated over time. Hakim also suggests that these types of records are expanding with the spread of computerized management information systems. One of the distinct advantages of using them is their non-reactivity. While the information may sometimes be inaccurate or incomplete, at least it is not usually manipulated by the producer of the data in the knowledge that the material is going to be studied. Hakim (1993) suggests that administrative records can provide the basis for longitudinal studies, quasi-experimental designs, international comparisons and studies of organizations and their development of policy.

On the negative side, there are at least two sources of potential bias: *selective*

*deposit* and *selective survival*. Hence, which records, documents or materials are archived by an organization will depend both on the policy of that organization but also on the extent to which that policy is implemented by its employees. In most modern organizations there exists a store of ‘official’ records, such as legal and financial documents, company reports, rules and regulations, staff handbooks and human resource records. But in addition, there will exist a wealth of less offi- cial ‘grey’ materials, such as e-mails, memoranda, minutes of meetings, team plans, marketing ideas, etc. that are an integral part of the knowledge base and thinking of the organization. Many of these will be stored on the computer hard disc of designated employees (company secretary, HR manager, Director of Marketing, etc.) or shared networks or are created and stored by individuals. What is stored or shared (often via e-mail attachments) and what is discarded will often be a matter of individual choice, rather than organizational policy. Hakim (1993) warns that researchers who use organizational records will often find that vital data are miss- ing, or that they have to contact employees to have the data interpreted or explained to them, to avoid erroneous assumptions.

Developments in computer technology have made the chances of records surviving both better and worse.We are all familiar with how the ravages of time have destroyed many ancient records.Those artefacts that we can see in museums have survived because of their composition (stone or clay rather than paper or wood, for example), or just by luck. Computers allow us to store vast amounts of data efficiently – or do they? There are many ways in which computers hinder the survival of data and records. First, there is plentiful evidence of computer failure – systems crash and backups fail. Secondly, there is the problem of incompati- ble computer systems; if, say, an organization moves to a single computer platform, what happens to the data on the discontinued system? Thirdly, there is technical obsolescence. In theory, computer systems are upwardly compatible, so that upgraded computers can read the data on older systems. But in the case of the original 5½ inch floppy disk, this data can only be read if it was copied to a hard drive. Similarly, how many of today’s videos will be available for viewing in ten year’s time when all transmission equipment is digital and most VCRs have broken down?

Apart from the impact of computers on data survival, organizations them-

selves are subject to mergers, takeovers and closures, all of which impact on whether data survive or are discarded. For example, if a company is taken over by another, which of its records would the new owner want to retain? Since the aggressor company already has its own legal, financial, operational and HR set up, it would probably not want to retain all of the captured company’s records. It is not only large companies where data and documents are destroyed. Many small organizations fail to survive beyond their first few years of existence. In addition to the casual destruction of records as organizations move or merge, there is also the risk of the deliberate destruction of material where this highlights the errors that organizations have made.

In exploring organizational archives, reliability can be improved by com- paring the data with that from other sources, such as newspaper or other media reports, customers or suppliers. This does not eliminate the risk that records are biased through selectivity, but it does at least reduce it.

***Actuarial records***

These include the data on births, deaths and marriages that most societies main- tain as a matter of course.They also include a wealth of other statistical, economic, social and political data. Such records are essential for providing governments and other agencies with data for planning purposes. The potential power of actuarial records is demonstrated by Webb et al. (1966), who refer to the study by Durkheim in 1951. In this, using government records, he showed how suicide rates were linked not so much to individual clinical depression but to religion, season of the year, time of day, race, sex, education and marital status.

One of the problems in comparing time-sets of data, that is, data across dif- ferent periods of time, is the influence of economic depressions, wars and other intervening factors. Data sets may also be difficult to compare across countries,

since there may be different criteria for recording data. For example, how do we compare commitment to marriage between countries in which monogamy and multiple marriage is practised?

***Political and judicial records***

The study of voting statistics and opinion polls is now almost an element of popular culture, and certainly one that is common in the mass media. Political pundits and researchers are interested not only with voting intentions, or the total votes cast for a particular party or candidate, but also with a breakdown of votes cast by region, locality, age group and social class.Voting behaviour is studied because it is seen by some as a ‘window’ into the hearts and minds of people as electors, citizens, workers and consumers. This assumes, of course, that people do not vote tactically, that is, they vote for the party of their genuine political choice, and not for another party to keep the party they dislike most out of office.

Other political records include the voting behaviour of members of the gov- ernment legislature.These are of interest not only to political commentators but also to professional lobbyists hired as consultants by businesses, interest groups and cam- paigning organizations.Another source for gauging the views of politicians is inter- views or comments in the media through television programmes and the press. Particularly if a source is an article written by a journalist, one has to be especially conscious of the threats to validity through biased reporting and hidden agendas.

**DOCUMENTS: EPISODIC RECORDS**

In contrast to running records that tend to be in the public domain, episodic records are discontinuous and tend to be private. Hence, they are often more dif- ficult to access.Webb et al. (1966) suggest three main classes: sales records, indus- trial and institutional records, and personal documents.To these we can add: visual and mass media records, and institutional investigations.

***Sales records***

Sales records do not just tell us how a company is doing in terms of successfully selling products or services, they can be used as indicators of social, business or other trends.Take, for example, a rise in the sale of beer and spirits at a company’s staff social club.This could be an indicator of a rise in gregarious activity, of con- tented employees choosing to mingle and socialize with each other. On the other hand, it could also be an indication of rising levels of stress and anxiety amongst the staff, leading to levels of alcohol abuse. Clearly, as is often the case, unobtru- sive measures have to be used with other indicators (such as observation or inter- views) before an accurate picture emerges.

|  |  |
| --- | --- |
| **Activity 11.2** |  |
| Think of what each of the following sales records might indicate and what events they might be linked to:   * Increased sale of personal insurance. * A fall in the sale of personal handguns. * A rise in the sale of cuddly toys. | |

***Industrial and institutional records***

These include the records kept by companies, schools, hospitals, prisons and the military and can cover a multiplicity of subjects. A company, for example, might collect data on employee headcount, employee turnover, promotions and absen- teeism. In terms of finance, many organizations are interested in knowing the size of their borrowing and the costs of financing it, turnover compared to profits and share price movements.

Examples of other kinds of institutional record include those organizations responsible for monitoring sex and race discrimination. In the latter case, organi- zations might collect data on the type and location of reported racial incidents, police responses and the actions, if any, of the judicial authorities.The episodes of racial ‘hotspots’ might be compared against other independent variables such as inflammatory speeches by certain politicians, media commentary, or the passing of equal opportunities legislation.

***Personal records***

Personal records include letters, diaries, autobiographies, biographies and oral his- tories. Brewer (2000) suggests a way of classifying personal records across two dimensions.The first is whether the records are primary (compiled by the author) or secondary (containing data obtained from someone else’s primary document). A second dimension is contemporary (compiled as a document at the time) or secondary (produced as a document after the event). Using these dimensions, we get four categories, as illustrated in Figure 11. 1.

As Brewer warns, making generalizations from such documents can be problematic, especially if they are personal documents about one individual.There may be more possibility of generalizations if the documents can be shown to be representative or typical of a group. The contents of personal documents should also be evaluated for distortion, misrepresentation, exaggeration and omission.

***Visual and mass media records***

Industrial societies are now awash with visual images in the mass communication media, many of which can provide a novel source of data, worthy of investigation and analysis. These include advertisements, newspaper photographs, textbooks,

|  |  |  |  |
| --- | --- | --- | --- |
| **Contemporary primary** | | **Contemporary secondary** | |
| ***Personal*** | ***Official*** | ***Personal*** | ***Official*** |
| Letters Suicide notes | Court record Minutes of meetings | Edited transcripts of letters, talks, etc | Research using census data |
| **Retrospective primary** | | **Retrospective primary** | |
| ***Personal*** | ***Official*** | ***Personal*** | ***Official*** |
| Diary Autobiography Oral history | Novels Historical archives | Research using diaries | Medical records Newspaper reports |

**FIGURE 11.1** SOURCES OF PERSONAL RECORDS (ADAPTED FROM BREWER, 2000)

comics and magazines, postcards and product packaging. If we take advertisements first, consider whether groups such as ethnic minorities or women are depicted in ways that are obviously different. Lee (2000) refers to the work of several researchers that suggests that real differences do exist. In some countries, visual images of black people, for example, are under-represented in advertisements, and where they appear, this is often in stereotypical roles as sportspeople or musicians. When black and white people appear in the same advertisement, they are rarely interacting with one another (Lee, 2000).

***Institutional investigations***

One potentially useful source of data that justifies more consideration is the use of evidence from legal and judicial investigations. Many governments, for example, set up special commissions to investigate large-scale disasters (such as rail crashes) or public inquiries into the siting of a new airport. It is not so much the subject focus of these inquiries that is of interest, but what the debate and dialogue reveals about the roles of organizations, institutions and pressure groups that attempt to influence the state. Of course, one of the dangers is not knowing the extent to which witnesses have been screened or specially selected, and what evidence has been submitted and what withheld.

**THE NEW DIGITAL ARCHIVES**

So far, we have looked at quite traditional forms of unobtrusive measures, many of which include the collection of documents (of various descriptions), usually located in

one place. But because of problems of access, many document archives are under-utilized by researchers. After all, if the archive that you need is hundreds or even thousands of kilometres away, you are going to have to do some serious personal planning to see it. The growth of the Internet and the World Wide Web, however, is changing this. It is also worth considering another new and digital source of information, closed circuit television, as yet another modern source of unobtrusive information.

***The Internet***

The Internet and World Wide Web are already making an impact on how archives are accessed.

*In the long term it may well be that the greatest contribution which the Internet makes to research is to provide easier access to archives.* (Sleeman, in Dochartaigh, 2002: 220)

Archives were once one of the most inaccessible research resources, and just discovering which resources were held in which archive could be a major research activity in itself.Today, however, the Internet allows archivists to put information about their collections into the public arena. The next stage, which is happening with many archives already, is then to put the collection itself onto the Web.With the provision of a search facility, it becomes possible to search for archival infor- mation from your work desk. Activity 11.3 provides some useful examples.

One factor that distinguishes archives from published sources, is that col- lections are presented so that the context and original order of the materials is maintained. This is an attempt to preserve the authenticity of the archive and its value to researchers. One of the dangers of the Web is that it can allow the user multiple access to documents at different levels. Archivists are conscious of this danger, hence, they often show the researcher how a holding was created.The use of Web links also allows for documents to be linked to one another in a variety of ways, each of which demonstrates different relationships and contexts.

|  |  |
| --- | --- |
| **Activity 11.3** |  |
| Take a look at the following websites, each of which provides you with access to archives of government and business information.  **Euromonitor** [(http://www.euromonitor.com/default.asp)](http://www.euromonitor.com/default.asp)) This site is a global information provider of strategic analysis and market statistics for dozens of global industries.  **National Archives and Records Administration of the United States** (NARA) [(http://www.nara.gov)](http://www.nara.gov/) This site provides a research room that gives details of its records, plus a search tool, NARA Archival Retrieval Locator (NAIL), for locating archival sources across the USA.  *(Continued)* | |

**Public Records Office**, England (PRO) [(http://www.pro.gov.uk)](http://www.pro.gov.uk/) A site that contains over 9 million files that are searchable through a multi-level cata- logue. The database includes legal and government archives.

**The National Archives of Australia** [(http://www.aa.gov.au)](http://www.aa.gov.au/) This site holds federal government records on defence, immigration, security and intelli- gence, naturalization and other issues.

**EAN** (European Archival Network) [(http://www.european-archival.net)](http://www.european-archival.net/) A site, organized alphabetically and geographically, for searching for European archives.

As well as websites dealing with general government and business information, there are a growing number of sites that offer access to statistics. Sleeman (2002) distinguishes between two kinds of site:

* *Statistics websites*. These are the websites of agencies (often government agen- cies) that collect statistics and make them available online. Not only can data tables be viewed, the sites often provide tools with which the data can be manipulated and analysed.
* *Data archives*. These provide indexes to datasets gathered from a wide variety of research projects and organizations, often allowing users to download full datasets for analysis on their own computers.

Activity 11.4 provides you with an opportunity to explore examples of each type of website.

|  |  |
| --- | --- |
| **Activity 11.4** |  |
| **Statistics websites**  **National Statistics: the official UK statistics site** [(http://www.statistics.gov.uk)](http://www.statistics.gov.uk/) A site that contains UK government economics statistics as well as statistics on education and migration.  **US Census Bureau** [(http://www.census.gov)](http://www.census.gov/) Provides data on the US pop- ulation, income, housing, and economic and government statistics.  **Statistical Resources on the Web** [(http://www.lib.umich.edu/libhome/docu-](http://www.lib.umich.edu/libhome/docu-) ments.center/stats.html) A vast guide with links to economics, politics and sociology sources.  **Data archives**  **National Digital Archive of Datasets (NDAD)** [(http://www.ndad.ulcc.ac.uk)](http://www.ndad.ulcc.ac.uk/) Provides access to computer datasets of UK government departments and agencies.  **ICPSR** (The Inter-university Consortium for Political and Social Research) [(http://www.](http://www/) icpsr.umich.edu) Provides access to the world’s largest archive of computerized social science data. | |

***Monitoring technology***

Many workplaces are now becoming penetrated by a growing infrastructure of technology capable of monitoring work performance. Leaving aside, for a moment, any ethical issues, the data generated from such technology are not only of value to the organizations that had it installed, but also to researchers – if they are able to gain access to it. Davies (2001) discusses both the range and power of the emerging technologies, including miniature cameras that monitor employee behaviour, ‘smart’ ID badges that track an employee’s movements in a building, and telephone management systems analysing the patterns of telephone use and the destination of calls.

Advances in location tracking now mean that geostationary satellite-based systems can send information on the precise location of an employee or vehicle back to a tracking centre. In the growing IT industry, employee use of their com- puter can also be monitored and measured, including the number of keystrokes they have been making, which websites they have accessed and the amount of time the computer was idle during the day. Many businesses routinely analyse their employees’ e-mail. Software can be used for analysing an organization’s entire e-mail traffic phrase by phrase, including a look for specific key words. In telephone call centres, software monitors the length and content of calls and the timing and duration of employee toilet and lunch breaks. Software can also monitor how often a call worker uses a customer’s name and how often they try to overcome a potential customer’s initial objection to a sale.

Closed circuit television (CCTV) equipment is also now becoming com- monplace where people travel, shop, socialize and even work. According to Davies:

*Once viewed as a blunt tool of surveillance, CCTV in the space of fifteen years is now seen as an integral design component of the urban and the work environment.* (Davies, 2001: 13)

Certainly CCTV is now becoming an integral component in modern retailing. Kirkup and Carrigan (2000) relate how CCTV is being used for:

* *Security:* to deter shoplifters and pickpockets and also to detect fraudulent activities among staff.
* *Safety:* to see who is still in a building after a fire or security alert.
* *Training:* allowing a retailer to capture the behaviour of both staff and cus- tomers that can then be used in staff development programmes.

But it is the research dimension where CCTV can provide a valuable mechanism for understanding consumer behaviour. For example, it can help retailers (or the researchers they commission) to:

* Analyse customer flows.
* Evaluate the impact of store refits.
* Identify ways of increasing store penetration.
* Measure dwell-time in different departments or on specific displays.
* Understand the nature of interactions between staff and customers.

In short, CCTV allows the retailer to explore the relationships between the profile of shoppers, their level of involvement in browsing and trialling, and the nature of their response to different stimuli (Kirkup and Carrigan, 2000). Digital technology can now be used both to gather and to analyse data. Software called ‘The Observer’, for example, allows for the computerized coding of observations, and the production of video ‘highlights’ (see Activity 11.5).

|  |  |
| --- | --- |
| **Activity 11.5** |  |
| Take a look at the specifications for The Observer software and what you can do with it at:  <http://www.noldus.com/products/index.html> | |

**ETHICAL ISSUES IN USING THE DIGITAL TECHNOLOGY**

***Ethics and the Internet***

Once e-mail communication has occurred between people, it remains available for other people to access in the future. In the case of newsgroups this can be for days or weeks, but for mailing lists it can be for as much as two years.These posts and archives, then, can be used by researchers as documents for analysis, and form a potentially rich source of data. Sixsmith and Murray (2001), however, raise some intriguing ethical issues linked specifically to research using the Internet.

**Accessing voices**

The ethical obligations of researchers go beyond the need merely to protect par- ticipants. It is also necessary to involve those in the research process whose voices are rarely heard in research, and for whom the new digital media provide a unique opportunity for communication. This could include socially disadvantaged groups, people with disabilities or children. For Flietas (referenced in Sixsmith and Murray, 2001), e-mail and Internet chatrooms may be perfect communication tools to address this problem.

**Consent**

As we saw in Chapter 10, an important feature of ethical considerations is that par- ticipants give their fully informed consent. An exception to this principle is obser- vational research in which behaviour in the public domain may be observed

without consent, so that natural behaviour can be observed in its context. But in ‘observing’ e-mail and Internet communications, are researchers similarly free from seeking consent? As Sixsmith and Murray (2001) comment, this is a highly con- tentious issue. Some researchers believe that all posts on the Internet are in the public domain and are, therefore, available for research purposes without the need for con- sent. But as Sixsmith and Murray warn, such a practice could lead to distrust and anger amongst discussion forum participants and would be highly damaging.Yet, if researchers do consult the discussion group, they run the risk of alerting participants to the fact that they are being observed and this may alter the dynamics of the group interaction.The observation would no longer be unobtrusive in the strictest sense. But Sixsmith and Murray conclude that the best course of ethical action is for researchers to consult the introductory notes or charters of electronic forums.

Even when following these kinds of guidelines, if undertaking research

through a discussion list it is prudent to contact the list moderator to gain per- mission for the research. Even if permission is granted, researchers need to be aware that their activities may not be greeted with approval by all members of the list. In joining a discussion group, researchers should announce their presence *as* researchers. But later on, other new members will be unaware of this intrusion unless researchers post reminders of their presence. Of course, they will also have access to the posts of those who left messages but subsequently left the group. These people will be unaware that their comments are being used by researchers.

**Privacy**

The ethics of research stipulate that the privacy and anonymity of participants must be respected during the research process (American Psychology Association, 1992). However, in practical terms, distinguishing between what is private and public behaviour can be difficult, since some private behaviour (for example, private con- versations, intimate behaviour, etc.) can be observed in public places. Hence, the concept of privacy needs to be understood within its specific social setting.

In the case of discussion list posts, the researcher has to establish whether these are made in a public or private context. The problem here is that partici- pants may tend to regard their posts as public (to the group) but private as far as outsiders are concerned. Since many posts are made from home-based computers, participants may tend to assume that their privacy will be respected. It may be useful, then, to distinguish between discussion groups, where privacy is probably assumed, and mailing lists where posts may be transmitted to hundreds or thousands of subscribers. Since the latter are available to everyone on the Internet, it is fairly safe to assume that they can be regarded as being in the public domain.

**Anonymity**

In using archived posts for research analysis, the anonymity of participants should be preserved. Any information that could identify the originators of the post should be removed, including names or pseudonyms used, as well as the names and locations of lists and newsgroups. The problem here, however, is that the

removal of this kind of information also limits the possibilities of thick description, that is, relating the research data with features such as the age, nationality and occupation of participants. Despite this problem, it is respect for ethical principles that should take priority.

**Interpretation**

In analysing data, it is important that the researcher does not misrepresent the par- ticipant’s meaning or views.This can be a particular danger when using data from discussion forums or archives because the data available may be incomplete (often old posts are deleted by the moderator or writers themselves). Another problem is that the discussion group data may not represent the entire communication process, since some participants will exchange e-mails privately.

To reduce the danger of misinterpretation, tracts of related messages need to be considered as a group, especially since messages are often related to each other in a thread. This allows for the discursive context of a message to be con- sidered through a more grounded interpretation.

**Ownership**

This is a complex issue. Do posts or archives belong to the poster (author), the dis- cussion group or the observer (who may be a researcher)? Issues of intellectual property rights and the Internet are contentious and, as yet, still largely unresolved. Mailbase (2002), for example, a UK discussion list for the academic com- munity, argues that e-mail messages are creative works and are therefore subject to copyright. Copyright exists automatically from the moment the e-mail is cre- ated – it does not have to be registered anywhere. The first owner of the copy- right is the author, except when the e-mail has been created in the course of employment, in which case it is owned by the employer. When a message is posted to a public list, this does not mean that the author loses this copyright, but should accept that the message may be archived, forwarded to other lists or quoted by others.What is important is that the message should not be quoted out of con-

text, the wording changed or be mis-attributed. It is usual practice, then, that:

* Messages sent to a closed mailing list or individual should not be forwarded without the author’s permission.
* Messages sent to a public mailing list can be forwarded provided that:

The message is not changed or reworded. Attribution is given to the author.

Any appended copyright notice is respected.

**Authorship**

It is the convention always to attribute authorship when making a direct quota- tion from someone’s work. But what if the source is a discussion group? We have

seen that Mailbase (2002) regards e-mails as similar to published works so that any quotation should include a credit to its source. However, as we have seen, this contradicts people’s right to anonymity. The solution here is to request the author’s permission before making long quotations.

***Ethics and monitoring technology***

Many of the above issues, particularly those relating to privacy, are also raised by the growth of monitoring technology, such as CCTV cameras and other surveillance media. Carrigan and Kirkup (2001) argue that the researcher’s main responsibility is to those that are observed, but there are also responsibilities to other groups, namely:

* The client who has commissioned the research.
* The general public who may not want to be filmed in certain shops (for example, chemists, opticians or lingerie stores).
* Innocent bystanders, since modern surveillance cameras have a 360º field of vision and are capable of filming well beyond their intended zone.
* The police or legal system if criminal activities are observed.
* Employees who may be concerned that recordings of their good or bad behaviour will affect their pay or promotional prospects.

The challenge is in reconciling the interests of these disparate groups. The objective of the research might be monitoring flows of customer traffic within the store to observe interest in particular displays. But later, the store management (clients) might request the tapes to examine employee behaviour.This abuses the privacy rights of the employee and reneges on the purpose of the research. If employees become aware of this kind of potential for abuse, they may become uncooperative, which then threatens the reliability and validity of subsequent research. However, the wishes of clients are difficult to ignore since they are the financial sponsors of the research. One way out of these difficulties is through the design of ethical frameworks.

**Ethical frameworks**

Laczniak (cited in Carrigan and Kirkup, 2001) suggests an ethical framework through which, if any of the following questions can be answered negatively, then the action is probably unethical:

* Does action A violate the law?
* Does action A violate any general moral obligations: justice, beneficence, self- improvement, etc?
* Is the intent of action A evil?
* Are any major evils likely to result from action A?
* Is a satisfactory alternative, action B, which produces equal or more good with less evil than action A, being knowingly rejected?
* Does action A infringe the inalienable rights of the participant?
* Does action A leave another person or group less well off, and is this person or group already relatively under-privileged?

The purpose of this framework is to sensitize researchers to the factors that are important in dealing with ethical issues. For example, if employees are recorded while customer behaviour is being taped, is the framework being vio- lated? The answer is ‘Yes’. While no evil is being intended, we cannot be assured that no evils will arise from the action because there is no way of knowing whether employers will use the video evidence against employees. Hence, it becomes important to look for other defence mechanisms.

**Professional codes of conduct**

We have seen in previous chapters that many professional associations that rely on research have put in place their own professional codes of conduct. In the case of market research, for example, this is provided by the Market Research Society’s (MRS) Code of Conduct which in turn is based upon the International Code of Marketing and Social Research Practice. In terms of establishing rules on the uses of video and other recording equipment, the MRS stipulates that:

* The researcher *must* [original emphasis] inform employees about any record- ing or monitoring methods (e.g. tape recording video recording and presence of a mirror or a camera) both at recruitment and at the beginning of an inter- view, giving the employee the option not to proceed. This also applies to instances where remote monitoring is used.
* Any audio or video recordings *must* [original emphasis] not be released by a researcher or research agency unless explicit permission has previously been obtained from all the employees involved. Where such permission is to be obtained the researcher must ensure that employees are given as much rele- vant information as possible about the future use of the data, in particular:

To whom they are to be given.

To whom they are likely to be shown.

For what purposes they are likely to be used.

* Any recorded data collected for research purposes *must* [original emphasis] not be used for any non-research purpose (Market Research Society, 2002)

However, as Carrigan and Kirkup (2001) note, as yet, many professional codes contain few specific references to the use of CCTV in retail settings.They also exclude the need to inform individuals where observation techniques or recording equipment are being used in a public place. Unfortunately, one of the difficulties is in the definition of a ‘public place’, with some organizations arguing that this includes the workplace, thereby gaining exclusion from codes of conduct. Conversely, employees and their trade unions or professional associations may dis- agree with this broad definition.

The codes of conduct of some television companies suggest that when filming in an institution there is no obligation to seek agreement when people are shown incidentally, randomly or anonymously. However, Carrigan and Kirkup (2001) argue that employees are not anonymous in this sense and so deserve equal rights of privacy. Where employees are the specific subject of the surveillance where standards of service are being evaluated, further safeguards are needed. For example, the video material should not subsequently be used for purposes other than the original objective (hence, it should not be used for disciplinary pur- poses). Staff should also be informed that filming is going to take place.The pro- fessional code of the European Society for Opinion and Market Research (ESOMAR) stipulates that participants must be asked to give their permission for the use of video tapes for non-research purposes and should be given the oppor- tunity to have the tapes deleted. If researchers pass a video on to a client it must be labelled with appropriate restrictions.

|  |  |
| --- | --- |
| **Activity 11.6** |  |
| Take a look at the Market Research Society’s Code of Conduct at: <http://www.mrs.org.uk/>  Click on Code/Guidelines, and look in particular for guidelines dealing with employees.  See also the website of the European Society for Opinion and Market Research at:  <http://www.esomar.nl/guidelines/Tapeandvideo.htm> | |

**Ethical contracts**

Since many professional codes are still trying to catch up with the ever-changing developments in technology, Carrigan and Kirkup (2001) suggest that an impor- tant safety-net can be provided by ethical contracts. These make transparent the roles and responsibilities of all stakeholders, including the researcher, before any research is undertaken through:

* Clarifying the aims and nature of the research.
* Identifying, with stakeholders, any potential conflicts that may arise.
* Drafting resolutions to these problems.
* Seeking the explicit agreement of all those affected.

If, at any point, a stakeholder wishes to act outside of the contract, the agreement of all other stakeholders must be sought.

There are, however, differences between employees and customers as sub- jects of surveillance research in that employees can be identified by researchers or

by their client. As such, the researcher has a particular responsibility to ensure anonymity for these individuals, or at least informed consent. Staff should be given assurance about the objectives of the research and should be allowed open access at all times to the CCTV control room.These objectives should not include using surveillance for non-research purposes such as disciplinary action, and per- mission for filming (although not necessarily its timing) should be sought.

Seeking the permission of customers is much more problematic. First, it would be simply impractical to ask all customers individually for their agreement. Secondly, there might be circumstances when the researcher might not want cus- tomers to know that they were being filmed since this might affect their subse- quent behaviour. Most market research codes of practice allow researchers to withhold this information to reduce the risk of bias. But permission would have to be obtained if the researcher wished to pass on video-footage to any third party. If a tape is passed on to a client, it should be labelled with appropriate restrictions that the recipient should be made aware of. It is also important that the video data are not held for longer than the purposes for which they were col- lected. Kirkup and Carrigan (2000) suggest a maximum time period of 31 days for CCTV footage, after which it should be destroyed.

|  |
| --- |
| **SUMMARY**   * Unobtrusive measures involve the use of non-reactive sources such as files, pho- tographs, videos, sound recordings and drawings and now the Internet. * Unobtrusive measures include the analysis of physical accretion and erosion mea- sures, and the use of documents that include a wide range of organizational, busi- ness and personal records. * One of the advantages of using unobtrusive records is that they deal with ‘dead’ data, they do not pose the risk faced by many other research methods, of reactive measurement effects such as interviewer bias, or socially conditioned responses by participants. * An important source of unobtrusive measures are documents that include running records (such as actuarial, political and judicial records) and episodic records (such as sales records and personal records). * Unobtrusive measures carry with them their own inherent problems in that docu- ments, for example, may be stored selectively, survive selectively and be inaccurate and incomplete. * The growth of the Internet and monitoring technology such as CCTV means that the scope for research using unobtrusive measures is increasing at a rapid rate. However, the new technology also brings with it new ethical challenges which require recognizing the interests of disparate groups. The use of ethical contracts may be one way of reconciling these different interests.   *(Continued)* |

|  |
| --- |
| **Summary of web links**  [http://www.aa.gov.au](http://www.aa.gov.au/) [http://www.census.gov](http://www.census.gov/)  <http://www.esomar.nl/guidelines/Tapeandvideo.htm> <http://www.euromonitor.com/default.asp> [http://www.european-archival.net](http://www.european-archival.net/) [http://www.icpsr.umich.edu](http://www.icpsr.umich.edu/)  <http://www.lib.umich.edu/libhome/documents.center/stats.html> [http://www.nara.gov](http://www.nara.gov/)  [http://www.ndad.ulcc.ac.uk](http://www.ndad.ulcc.ac.uk/) <http://www.noldus.com/products/index.html> <http://www.mrs.org.uk/> [http://www.pro.gov.uk](http://www.pro.gov.uk/) [http://www.statistics.gov.uk)](http://www.statistics.gov.uk/) |

**Further Reading**

Webb, E.J., Campbell, D.T., Schwartz, R.D. and Sechrest, L. (1966) *Unobtrusive Measures: Nonreactive Research in the Social Sciences*. Chicago: Rand McNally. Something of a classic, it was in this book that the term unobtrusive measures was originally coined and described with ele- gance, clarity and intriguing examples.

Lee, R.M. (2000) *Unobtrusive Measures in Social Research*. Buckingham: Open University Press. Given that the pioneering work of Webb et al. was writ- ten in 1966, this is a welcome and very much updated discussion of the sub- ject. It also contains a useful chapter on unobtrusive measures and the Internet.

|  |  |
| --- | --- |
| **Suggested answers for Activity 11.1** |  |
| 1. Triangulation of methods is evidenced by the fact that the researcher uses observation (of where people consume their drinks), as well as using the unobtrusive indicators. This, certainly, helps towards the reliability of the study. 2. Using an interview method would probably not have worked here because the honesty of replies could not be assured – and would the manager have believed them?! | |

**Analysis and Report Writing**

**PART D**

**Analysing and Presenting Quantitative Data**

**12**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Prepare data for analysis.**
* **Select appropriate formats for the presentation of data.**
* **Choose the most appropriate techniques for describing data (descriptive statistics).**
* **Choose the most appropriate techniques for exploring relationships and trends in data (correlation and inferential statistics).**

As we have seen in previous chapters, the distinction between quantitative and qualitative research methods is often blurred. Take, for example, survey methods. These can be purely descriptive in design, but on the other hand, the gathering of respondent profile data provides an opportunity for finding associations between classifications of respondents and their attitudes or behaviour, providing the potential for quantitative analysis.

One of the essential features of quantitative analysis is that, if you have planned your research tool, collected your data and *now* you are thinking of how to analyse it – you are too late! The process of selecting statistical tests should take place at the *planning* stage of research, not at implementation. This is because it is so easy to end up with data for which there is no meaningful statistical test. Robson (1993) also provides an astute warning that, particularly with the aid of the modern computer, ‘it becomes that much easier to generate elegantly presented rubbish (remember GIGO – Garbage In, Garbage Out)’ (Robson, 1993: 310).

The aim of this chapter is to introduce you to some of the basic statistical techniques. It does not pretend to provide you with an in-depth analysis of more complex statistics, since there are specialized textbooks for this purpose. It is assumed that you will have access to a computer and an appropriate software

application for statistical analysis, such as Microsoft Excel or SPSS. Again, detailed advice is not provided on how to actually use these programs since there are already textbooks available. It is also suggested that, especially if you are relatively new to statistics, you obtain access to someone more experienced than yourself to act as a guide or mentor. Note that in this chapter, rather than offer you Activities, Worked Examples using statistical formulae will be provided.

**CATEGORIZING DATA**

The process of categorizing data is important because, as was noted in Chapter 4, the statistical tests that are used for data analysis will depend on the type of data being collected. Hence, the first step is to classify your data into one of two cate- gories, *categorical* or *quantifiable* (see Figure 12.1). Categorical data cannot be quan- tified numerically but are either placed into sets or categories (*nominal* data) or ranked in some way (*ordinal data*). Quantifiable data can be measured numerically, which means that it is more precise.Within the quantifiable classification there are two additional categories of *interval* and *ratio* data. All of these categories are described in more detail next. Saunders et al. (2000) warn that if you are not sure about the level of detail you need in your research study, it is safest to collect data at the highest level of precision possible.

Quantifiable

Data

Categorical

Nominal

Ordinal

Interval

Ratio

*Degree of precision*

**FIGURE 12.1** TYPES OF CATEGORICAL AND QUANTIFIABLE DATA

In simple terms, these data are used for different analysis purposes. Table 12.1 suggests some typical uses and the kinds of statistical tests that are appropriate.

As Diamantopoulos and Schlegelmilch (1997) point out, the four kinds of measurement scale are nested within one another: as we move from a lower level

**TABLE 12.1** MEASUREMENT SCALES AND THEIR USES

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Nominal** | **Ordinal** | **Interval** | **Ratio** |
| **Example of** | Type of firm | Customer | Temperature | Sales |
| **usage** |  | preference |  |  |
|  | Type of | Organizational | Weight | Costs |
|  | product | hierarchy |  |  |
|  | Location of |  | Blood pressure | Number of |
|  | organization |  |  | customers |
|  |  | Attitudes |  | Age of workforce |

**Statistical tests** Non-parametric tests Parametric tests

|  |  |
| --- | --- |
| **Which category describes where the employee works?** (Tick one) | |
| Retail department | □ |
| Warehouse | □ |
| Accounts | □ |
| Personnel | □ |

**FIGURE 12.2** TYPES OF QUESTION THAT YIELD NOMINAL DATA

of measurement to a higher one, the properties of the lower type are retained. Thus, all the statistical tests appropriate to the lower type of data can be used with the higher types as well as additional, more powerful tests. But this does not work in reverse: as we move from, say, interval data to ordinal, the tests appropriate for the former cannot be applied to the latter. For categorical data only, non- parametric statistical tests can be used, but for quantifiable data (see Figure 12.1), more powerful parametric tests need to be applied. Hence, in planning data collec- tion it is better to design data gathering instruments that yield interval and ratio data, if this is appropriate to the research objectives. Let us look at each of the four data categories in turn.

***Nominal data***

Nominal data constitute a name value or category with no order or ranking implied (for example, sales departments, occupational descriptors of employees, etc.). A typical question that yields nominal data is presented in Figure 12.2, with a set of data that results from this presented in Table 12.2. Thus, we can see that with nominal data, we build up a simple frequency count of how often the nominal category occurs.

**TABLE 12.2** NUMBER OF EMPLOYEES PER

DEPARTMENT (NOMINAL SCALE)

|  |  |
| --- | --- |
| **Department/location** | **Frequency** |
| Retail | 67 |
| Warehouse | 62 |
| Accounts | 15 |
| Personnel | 16 |

***Ordinal data***

Ordinal data comprises an ordering or ranking of values, although the intervals between the ranks are not intended to be equal (for example, an attitude ques- tionnaire). A type of question that yields ordinal data is presented in Figure 12.3. Here there is a ranking of views (Sometimes, Never, etc.) where the order of such views is important but there is no suggestion that the differences between each scale are identical. Ordinal scales are also used for questions that rate the quality of something (for example, very good, good, fair, poor, etc.) and agreements (for example, Strongly agree, Agree, Disagree, etc.). The typical results of gathering ordinal data are taken from Figure 12.3 and presented in Table 12.3.

|  |  |
| --- | --- |
| **How often have you felt like insulting a customer? (Tick one)** | |
| Every day | □ |
| Once a week | □ |
| Sometimes | □ |
| Never | □ |

**FIGURE 12.3** TYPES OF QUESTION THAT YIELD ORDINAL DATA

***Interval data***

With quantifiable measures such as interval data, numerical values are assigned along an interval scale with equal intervals, but there is no zero point where the trait being measured does not exist. For example, a score of zero on a traditional IQ test would have no meaning.This is because the traditional IQ score is the raw (actual) score converted into a mental age divided by chronological age. Another characteristic of interval data, is that the difference between a score of 14 and 15 would be the same as the difference between a score of 91 and 92. Hence, in con- trast to ordinal data, the differences between categories *are* identical.The kinds of results from interval data are illustrated in Table 12.4, showing quite a normal distribution of scores on an IQ test, delivered as part of a company’s aptitude assessment of staff.

**TABLE 12.3** FREQUENCY TABLE SHOWING NUMBER OF RESPONSES ON ATTITUDE QUESTIONNAIRE (ORDINAL)

|  |  |
| --- | --- |
| **Staff tendency to insult customers** | **Number of responses** |
| Every day | 10 |
| Once a week | 15 |
| Sometimes | 11 |
| Never | 4 |

|  |  |
| --- | --- |
| **TABLE 12.4** | FREQUENCY TABLE SHOWING NUMBER  OF EMPLOYEES SCORING WITHIN VARIOUS RANGES ON  IQ TEST |
| **Scores** | **Frequency** |
| 76–80 | 1 |
| 81–85 | 0 |
| 86–90 | 4 |
| 91–95 | 10 |
| 96–100 | 21 |
| 101–105 | 25 |
| 106–110 | 48 |
| 111–115 | 18 |
| 116–120 | 11 |
| 121–125 | 4 |
| 126–130 | 1 |
| 131–135 | 2 |
| 136–140 | 1 |

***Ratio data***

Ratio data are a subset of interval data, and the scale is again interval, but there is an absolute zero that represents some meaning, for example, scores on an achieve- ment test. If an employee, for example, undertakes a work-related test and scores zero, this would indicate a complete lack of knowledge or ability in this subject! An example of ratio data is presented in Table 12.5.

This sort of classification scheme is important because it influences the ways in which data are analysed and what kind of statistical tests can be applied. Having incorporated variables into a classification scheme, the next stage is to look at how data should be captured and laid out, prior to analysis and presentation.

**DATA ENTRY, LAYOUT AND QUALITY**

Data entry involves a number of stages, beginning with ‘cleaning’ the data, plan- ning and implementing the actual input of the data, and dealing with the thorny problem of missing data. Ways of avoiding the degradation of data will also be discussed.

**TABLE 12.5** FREQUENCY DISTRIBUTION OF

EMPLOYEE SCORES ON AN

IN-HOUSE WORK-RELATED TEST

|  |  |
| --- | --- |
| **Scores range** | **Frequency** |
| 0–4 | 4 |
| 5–9 | 13 |
| 10–14 | 15 |
| 15–19 | 12 |
| 20–24 | 8 |

***Cleaning the data***

Data analysis will only be reliable if it is built upon the foundations of ‘clean’ data, that is, data that have been entered into the computer accurately. When entering data containing a large number of variables and many individual records, it is easy to enter a wrong figure or to miss an entry. One solution is for two people to enter data separately and to compare the results, but this is expensive. Another approach is to use frequency analysis on a column of data that will throw up any spurious figures that have been entered. For example, if you are using numbers 1 to 5 to represent individual codes for each of five variables, the frequency analy- sis might show that you had also entered the number 8 – clearly a mistake.Where there are branching or skip questions (recall Chapter 8) it may also be necessary to check that respondents are going through the questions carefully. For example, they may be completing sections that do not apply to them or missing other sections.

***Data coding and layout***

Coding usually involves allocating a number to data. Take care, however, not to make the mistake of subsequently analysing the codes as raw data! The codes are merely shorthand ways of describing the data. Once the coding is completed, it is possible to collate the data into groups of less detailed categories. So, in Case Study 12.1 the categories could be re-coded to form the groups Legal and Financial and then Health and Safety.

The most obvious approach to data layout is the use of tables in the form of a *data matrix*.Within each data matrix, columns will represent a single variable while each row presents a case or profile. Hence,Table 12.6 illustrates an example of data from a survey of employee attitudes. The second column, labelled ‘Id’, is the *survey form identifier*, allowing the researcher to check back to the original sur- vey form when checking for errors.The next column contains numbers, each of which signifies a particular department. Length of service is quantifiable data rep- resenting actual years spent in the organization, while seniority is again coded data signifying different scales of seniority. Thus, the numerical values have different meanings for different variables. Note that Table 12.6 is typical of the kind of data

**TABLE 12.6** DATA MATRIX FROM SURVEY SHOWING DATA CODING FOR EACH VARIABLE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Case** | **Id** | **Department** | **Length of service** | **Seniority** |
| **Case 1** | 1 | 5 | 3 | 2 |
| **Case 2** | 2 | 2 | 1 | 3 |
| **Case 3** | 3 | 3 | 12 | 2 |

matrix that can be set up in a software program such as Excel, ready for the application of statistical formulae.

Case Study 12.1 illustrates the kind of survey layout and structure that yields data suitable for a data matrix (presented at the end of the Case Study). Hence, we have a range of variables and structured responses, each of which can be coded.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Case Study 12.1 From survey instrument to data matrix**  A voluntary association that provides free advice to the public, seeks to discover which of its services are most utilized. A survey form is designed dealing with four potential areas, namely the law, finance, health, and safety in the home.  **Question:** Please look at the following services and indicate whether you have used any of them in the last 12 months. | | | | | | |
| Legal advice Financial advice Health advice  Advice on safety in the home | | | Yes | No | Not sure | |
| □  □  □  □ | □  □  □  □ | □  □  □  □ | |
| The data are collected from 100 respondents and input into the following data matrix using the numerical codes: 1  Yes; 2  No; 3  Not sure; 0  No data/no response. | | | | | | |
| **Id** | **Legal** | **Finance** | | **Health** | | **Safety** |
| **Respondent 1** | 1 | 2 | | 2 | | 2 |
| **Respondent 2** | 2 | 1 | | 1 | | 1 |
| **Respondent 3** | 1 | 0 | | 0 | | 0 |
|  | | | | | | |

Note that in Case Study 12.1 Respondent 3 has ticked the box for ‘Legal advice’ but has failed to complete any of the others – hence, a ‘0’ for no data has to be put in the matrix.

***Dealing with missing data***

Oppenheim (1992) notes that the best approach to dealing with missing data is not to have any! Hence, steps should be taken to ensure that data are collected from all of the intended sample and that non-response is kept to a minimum. But in practice, we know that there will be cases where either a respondent has not replied or has not answered all the questions. The issue here is one of potential bias – has the respondent omitted those questions they feel uneasy about or hos- tile to answering? For example, in answering a staff survey on working practices, are those with the worst records on absenteeism more likely to omit the questions on this (hence, potentially biasing the analysis)?

It might be useful to distinguish between four different types of missing values:‘Not applicable’ (NA),‘Refused (RF),‘Did not know’ (DK) and ‘Forgot to answer’ (FA). Making this distinction may help you to adopt strategies for coping with this data loss.Table 12.7 illustrates examples of these responses.

**TABLE 12.7** DISTINGUISHING BETWEEN DIFFERENT TYPES OF NON-RESPONSE

**Response Recorded for value**

Question answered by wrong or inappropriate person, Not applicable

e.g. line manager of intended respondent

Rude message instead of response Refused

All questions answered except one Forgot to answer All questions answered accurately but one left blank Did not know

You may note that the categories for non-response chosen may depend largely on the researcher’s inferences or guesswork. How do we know that some- one forgot to answer or simply did not know how to respond? Of course, if many people fail to answer the same question, this might suggest there is something about the question they do not like – in which case, this could be construed as ‘Refusal’. You may decide to ignore these separate categories and just use one ‘No answer’ label. Alternatively, you might put in a value if this is possible by tak- ing the average of other people’s responses. There are dangers, however, in this approach, particularly for single item questions. Note that some statisticians have spent almost a lifetime pondering issues of this kind! It would be safer if missing data were entered for a sub-question that comprised just one of a number of sub- questions (for which data *was* available). Note, also, that this becomes unfeasible if there are many non-responses to the same question, since it would leave the calculation based on a small sample.

|  |  |  |
| --- | --- | --- |
| 18–24 | [ | ] |
| 25–34 | [ | ] |
| 35–44 | [ | ] |
| 45–54 | [ | ] |
| 55–64 | [ | ] |
| 65 | [ | ] |

**FIGURE 12.4** SECTION OF QUESTIONNAIRE COMPRISING AN AGE PROFILE

**Please indicate your age by ticking the appropriate box:**

***Avoiding the degradation of data***

It is fairly clear when non-response has occurred, but it is also possible to compromise the quality of data by the process of degradation. Say, we were interested in measur- ing the age profile of the workforce and drew up a questionnaire, as illustrated in Figure 12.4. One problem here is that the age categories are unequal (for example, 18–24 compared with 25–34). But a further difficulty is the loss of information that comes with collecting the data in this way.We have ended up with an ordinal mea- sure of what should be ratio data and cannot even calculate the average age of the workforce. Far better would have been simply to ask for each person’s exact age (for example, by requesting their date of birth) and the date the questionnaire was com- pleted. After this, we could calculate the average age (mean), the modal (most fre- quently occurring) age, identify both the oldest and youngest worker, etc.

**PRESENTING DATA USING DESCRIPTIVE STATISTICS**

One of the aims of descriptive statistics is to describe the basic features of a study, often through the use of graphical analysis. Descriptive statistics are distinguished from *inferential* statistics in that they attempt to show what the data *is*, while infer- ential statistics try to draw conclusions beyond the data – for example, inferring what a population may think on the basis of sample data.

Descriptive statistics, and in particular the use of charts or graphs, certainly provide the potential for the communication of data in readily accessible formats, but the kinds of graphics used will depend on the types of data being presented.This is why the start of this chapter focused on classifying data into nominal, ordinal, inter- val and ratio categories, since not all types of graph are appropriate for all kinds of data. Black (1999) provides a neat summary of what is appropriate (see Table 12.8).

**TABLE 12.8** APPROPRIATE USE OF CHARTS AND GRAPHS FOR FREQUENCY DATA

**Bar chart Pie chart Histogram Frequency**

**polygon**

Nominal  

Ordinal 

Interval  

Ratio  

**Frequency**

*Source*: Adapted from Black, 1999: 306

**FIGURE 12.5** BAR CHART FOR THE NOMINAL DATA IN FIGURE 12.2

80

70

60

50

40

30

20

10

0

Retail

Warehouse

Accounts

Personnel

**Department**

***Nominal and ordinal data – single groups***

As we saw earlier, nominal data are a record of categories or names, with no intended order or ranking, while ordinal data do assume some intended ordering of categories. Taking the nominal data in Table 12.2, we can present a bar chart (Figure 12.5) for the frequency count of staff in different departments.

Figure 12.6 shows that this same set of data can also be presented in the form of a pie chart. Note that pie charts are suitable for illustrating nominal data but are not appropriate for ordinal data – obviously, because it presents propor- tions of a total, not the ordering of categories.

***Interval and ratio data – single groups***

Interval and ratio data describe scores on tests, age, weight, annual income, etc., for a group of individuals. These numbers are then, usually, translated into a fre- quency table, such as in Tables 12.2 and 12.3. The first stage is to decide on the number of intervals in the data. Black (1999) recommends between 10 and 20 as

Personnel

10%

Accounts

9%

Retail

42%

Warehouse

39%

**FIGURE 12.6** PIE CHART OF THE NOMINAL DATA IN FIGURE 12.2

**TABLE 12.9** AGE PROFILE OF E-COMMERCE DEVELOPMENT COMPANY

|  |  |  |  |
| --- | --- | --- | --- |
| **Age** | **Frequency** | **Age** | **Frequency** |
| **22** | 1 | **33** | 10 |
| **23** | 2 | **34** | 4 |
| **24** | 3 | **35** | 3 |
| **25** | 6 | **36** | 2 |
| **26** | 5 | **37** | 4 |
| **27** | 11 | **38** | 2 |
| **28** | 15 | **39** | 2 |
| **29** | 7 | **40** | 0 |
| **30** | 9 | **41** | 0 |
| **31** | 3 | **42** | 1 |
| **32** | 4 | **43** | 0 |

acceptable, since going outside this range would tend to distort the shape of the histogram or frequency polygon. Take a look at the data on an age profile of the entire workforce in an e-commerce development organization, presented in Table 12.9. The age range is from 22 to 43, a difference of 21. If we selected an interval range of 3, this would only give us a set of seven age ranges and conflict with Black’s (1999) recommendation that only a minimum of 10 ranges is accept- able. If, however, we took two as the interval range, we would end up with 11 sets of intervals, as in Table 12.10, which is acceptable. We then take this data for graphical presentation in the form of a histogram, as in Figure 12.7.

***Nominal data – comparing groups***

So far, we have looked at presenting single sets of data. But often research will require us to gather data on a number of related characteristics and it is useful to

**TABLE 12.10** FREQUENCY TABLE FOR AGE RANGE (INTERVAL) DATA

25

20

15

10

5

0

2223 2425 2627 2829 3031 3233 3435 3637 3839 4041 4243

Age range

|  |  |  |  |
| --- | --- | --- | --- |
| **Age range** | **Frequency** | **Age range** | **Frequency** |
| **22–23** | 3 | **34–35** | 7 |
| **24–25** | 9 | **36–37** | 6 |
| **26–27** | 16 | **38–39** | 4 |
| **28–29** | 22 | **40–41** | 0 |
| **30–31** | 12 | **42–43** | 1 |
| **32–33** | 14 |  |  |

**FIGURE 12.7** HISTOGRAM ILLUSTRATING INTERVAL DATA IN TABLE 12.10

Frequency

be able to compare these graphically. For example, returning to Table 12.2 and the number of employees per department, these may be aggregate frequencies, based on the spread of both male and female workers per department, as in Figure 12.8.

Another way of presenting these kind of data is where it is useful to show not only the distribution between groups, but the total size of each group, as in Figure 12.9.

***Interval and ratio data – comparing groups***

It is sometimes necessary to compare two groups for traits that are measured as continuous data. While this exercise is, as we have seen, relatively easy for nomi- nal data that is discreet, interval and ratio data are continuous, so the two sets of data may overlap and one hide the other.The solution is to use a frequency poly- gon. As we can see in Figure 12.10, we have two sets of continuous data of test scores, one set for a group of employees who have received training and another for those who have not. The frequency polygon enables us to see both sets of results simultaneously and to compare the trends.

**FIGURE 12.8** BAR CHART FOR NOMINAL DATA WITH COMPARISON BETWEEN GROUPS

60

50

40

30

20

10

**Department**

Warehouse Accounts Personnel

Retail

0

Men Women

**Frequency**

**Frequency**

**FIGURE 12.9** STACKED BAR CHART FOR NOMINAL DATA WITH COMPARISON BETWEEN GROUPS

80

70

60

50

40

30

20

10

**Department**

Warehouse Accounts Personnel

Retail

0

Women Men

***Two variables for a single group***

You may also want to compare two variables for a single group. Returning once more to our example of departments, we might look at the age profiles of the workers in each of them. Figure 12.11 shows the result.

**ANALYSING DATA USING DESCRIPTIVE STATISTICS**

A descriptive focus involves the creation of a summary picture of a sample or population in terms of key variables being researched. This may involve the

**FIGURE 12.10** FREQUENCY POLYGONS FOR TWO SETS OF CONTINUOUS DATA SHOWING TEST SCORES



9

8

7

6

5

4

3

2

1

0

**Test scores**

Trained

Not trained

**Frequency**

2024

2529

3034

3539

4044

4549

5054

5559

6064

6569

7074

7579

8084

8589

14

12

10

8

6

4

2

0

**16****21**

**31****35**

**46****50**

**Retail**

**Warehouse**

**61****65**

**Accounts**

**Personnel**

**FIGURE 12.11** SOLID POLYGON SHOWING DATA FOR TWO VARIABLES: DEPARTMENT AND AGE

presentation of data in graphical form (as in the previous section) or the use of descriptive statistics, as discussed here.

***Frequency distribution and central tendency***

Frequency distribution is one of the most common methods of data analysis, particularly for analysing survey data. Frequency simply means the number of

**TABLE 12.11** PERCENTAGE OF RESPONDENTS ANSWERING FOR EACH ATTITUDE CATEGORY OVER A TWO-YEAR PERIOD

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Agree** | **Agree** | **Disagree** | **Strongly Disagree** | **Total** |
| 2002 | 14 | 40 | 32 | 14 | 100 |
| 2003 | 21 | 33 | 26 | 20 | 100 |

**TABLE 12.12** METHOD OF SCORING EACH RESPONSE CATEGORY IN ORDER TO CALCULATE THE MEAN SCORE

**Strongly Agree Agree Disagree Strongly Disagree Score** 4 3 2 1

instances in a class, and in surveys it is often associated with the use of Likert scales. So, for example, a survey might measure customer satisfaction for a parti- cular product over a two-year period.Table 12.11 presents a typical set of results, showing what percentage of customers answered for each attitude category to the statement: ‘We think that the Squeezy floor cleaner is good value for money’.

Comparing the data between the two years, it appears that there has been a 7 per cent rise in the number of customers who ‘Strongly Agree’ that the floor cleaner is good value for money. Unfortunately, just to report this result would be misleading because, as we can see, there has also been a 6 per cent rise in those who ‘Strongly Disagree’ with the statement. So what are we to make of the results? Given that the ‘Agree’ category has fallen by 7 per cent and the ‘Disagree’ category by 6 per cent, have attitudes moved for or against the product? To make sense of the data, two approaches need to be adopted.

* The use of *all* the data, not just selected figures that meet the researcher’s agendas.
* A way of quantifying the results using a single, representative figure.

This scoring method involves the calculation of a *mean score* for each set of data. Hence, the categories could be given a score, as illustrated in Table 12.12.

All respondents’ scores can then be added up, yielding the set of scores pre- sented in Table 12.13, and the *mean*, showing that, overall, attitudes have moved very slightly in favour of the product.

Since the data can be described by the mean, a single figure, it becomes pos- sible to make comparisons between different parts of the data or, if, say, two sur- veys are carried out at different periods, across time. Of course, there are also dangers in this approach.There is an assumption (possibly a mistaken one) that the differences between these ordinal categories are identical. Furthermore, the mean is only one measure of central tendency, others including the median and the mode. The *median* is the central value when all the scores are arranged in order. The *mode* is simply the most frequently occurring value. If the median and mode scores are less than the mean, the distribution of scores will be skewed to the left (positive skew); if they are greater than the mean, the scores are said to be skewed

**TABLE 12.13** CALCULATION OF MEAN SCORES FOR ATTITUDE CATEGORIES TO DISCOVER ATTITUDE TRENDS OVER A TWO-YEAR PERIOD

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Strongly Agree** | **Agree** | **Disagree** | **Strongly Disagree** |  | |
| **(4)** | **(3)** | **(2)** | **(1)** | **Total** | **Mean** |
| 2002 | 56 | 120 | 64 | 14 | 254 | 2.86 |
| 2003 | 84 | 99 | 52 | 20 | 255 | 2.97 |

to the right (negative skew). So, while two mean scores could be identical, this need not imply that two sets of scores were the same, since each might have a dif- ferent *distribution* of scores.

Having made these qualifications, this scoring method can still be used, but is probably best utilized over a multiple set of scores rather than just a single set. It is also safest used for descriptive rather than for inferential statistics.

***Measuring dispersion***

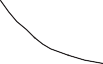
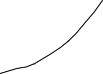
In addition to measuring central tendency, it may also be important to measure the *spread* of responses around the mean to show whether the mean is represen- tative of the responses or not.There are a number of ways of measuring this:

* The *range:* the difference between the highest and the lowest scores.
* The *inter-quartile range:* the difference between the score that has a quarter of the scores below it (often known as the first quartile or the 25th percen- tile) and the score that has three-quarters of the scores below it (the 75th percentile).
* The *variance:* a measure of the average of the squared deviations of individual scores from the mean.
* The *standard deviation:* a measure of the extent to which responses vary from the mean, and is derived by calculating the variances from the mean, squaring them, adding them and calculating the square root. Like the mean, because you are able to calculate a single figure, it allows comparisons to be made between different parts of a survey and across time periods.

***The normal distribution***

The normal distribution curve is bell-shaped, that is symmetrical around the mean, which means that there are an equal number of subjects above as below the mean (*X* ).The shape of the curve also indicates the proportion of subjects at each of the standard deviations (S, 1S, etc.) above and below the mean.Thus in Figure 12.12, 34.13 per cent of the subjects are one standard deviation above the mean and another 34.13 per cent below it.

In the real world, however it is often the case that distributions are not normal, but skewed, and this will have implications for the relationship between



5.00

4.50

4.00

3.50

3.00

2.50

2.00

1.50

1.00

0.50

0.00

0

**3** 20 **2**

**1** 40

**0**

60

**1 2**

80 **3**

100

**FIGURE 12.12** THE THEORETICAL ‘NORMAL’ DISTRIBUTION WITH MEAN  0

the mean, the mode and the median.Where the distribution is positively skewed, the majority of the subjects are above the mean in terms of the trait or attitude being measured; for a distribution that is negatively skewed, the majority are below the mean.

**THE PROCESS OF HYPOTHESIS TESTING: INFERENTIAL STATISTICS**

We saw in Chapter 4 that the research process may involve the formulation of a hypothesis or hypotheses that describe the relationship between two variables. In this section we will re-examine hypothesis testing in a number of stages, which comprise:

* Hypothesis formulation.
* Specification of significance level (to see how safe it is to accept or reject the hypothesis).
* Identification of the probability distribution and definition of the region of rejection.
* Selection of appropriate statistical tests.
* Calculation of the test statistic and acceptance or rejection of the hypothesis.

***Hypothesis formulation***

As we saw in Chapter 4, a hypothesis is a statement concerning a population (or populations) that may or may not be true, and constitutes an inference or infer- ences about a population, drawn from sample information. Let us say, for example,

that we work for a marketing company conducting some research on the ownership of palmtop computers in western Europe. We conjecture that per capita owner- ship in the UK is likely to be greater than that in France. If we had unlimited time and resources, we could survey both populations. For practical considerations, of course, we have to sample. If we took random samples for both the UK and French populations and found that ownership was 18 per cent in the UK and 12 per cent in France, our conjecture would be confirmed by the evidence. Or would it?

First, we run the danger of sampling error, with the smaller the sample size the greater the potential for this error. Secondly, we can never ‘prove’ something to be true, because there always remains a finite possibility that one day someone will emerge with a refutation. Hence, for research purposes, we usually phrase a hypothesis in its null (negative) form. So, rather than state:

*The ownership of palmtop computers will be greater in the UK than in France.*

We say:

*The ownership of palmtop computers will* not *be greater in the UK than in France.*

Then, if we find that the data for ownership is greater for the UK than in France, we can reject the null hypothesis.

Hypotheses come in essentially three forms.Those that:

* Examine the characteristics of a single population (and may involve calculating the mean, median and standard deviation and the shape of the distribution).
* Explore contrasts and comparisons between groups.
* Examine associations and relationships between groups.

For one research study, it may be necessary to formulate a number of null hypotheses incorporating statements about distributions, scores, frequencies, asso- ciations and correlations.

***Specification of significance level***

Having formulated the null hypothesis, we must next decide on the circumstances in which it will be accepted or rejected. Since we do not know with absolute cer- tainty whether the hypothesis is true or false, ideally, we would want to reject the null hypothesis when it is false, and to accept it when it is true. However, since there is no such thing as an absolute certainty (especially in the real world!), there is always a chance of rejecting the null hypothesis when in fact it is true (called a Type I error) and accepting it when it is in fact false (a Type II error).Table 12.14 presents a summary of possible outcomes.

**TABLE 12.14** POTENTIAL ERRORS IN HYPOTHESIS TESTING

**Situation in the population**

|  |  |  |
| --- | --- | --- |
| **Decision made on null hypothesis** | **Hypothesis is true** | **Hypothesis is false** |
| Hypothesis is rejected | Type I error | Correct decision |
| Hypothesis is not rejected | Correct decision | Type II error |

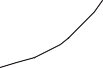
What is the potential impact of these errors? Say, for example, we measure whether a new training programme improves staff attitudes to customers, and we express this in null terms (the training will have no effect). If we made a Type I error then we are rejecting the null hypothesis, and therefore claim that the train- ing *does* have an effect when, in fact, this is not true.You will, no doubt, recognize that we do *not* want to make claims for the impact of independent variables that are actually false.Think of the implications if we made a Type I error when test- ing a new drug! We also want to avoid Type II errors, since here we would be accepting the null hypothesis and therefore failing to notice the impact that an independent variable was having.

Type I and Type II errors are the converse of each other. As Fielding and Gilbert (2000) observe, anything we do to reduce a Type I error will increase the likelihood of a Type II error, and vice versa. Whichever error is the most likely depends on how we set the significance level (see next).

***Identification of the probability distribution***

What are the chances of making a Type I error? This is measured by what is called the *significance level,* which measures the probability of making a mistake.The signi- ficance level is always set before a test is carried out, and is traditionally set at either 0.05, 0.01, or 0.001.Thus, if we set our significance level at 5 per cent (p  0.05), we are willing to take the risk of rejecting the null hypothesis when in fact it is correct 5 times out of 100.

All statistical tests are based on an area of acceptance and an area of rejec- tion. For what is termed a one-tailed test, the rejection area is either the upper or lower tail of the distribution. A one-tailed test is used when the hypothesis is directional, that is, it predicts an outcome at either the higher or lower end of the distribution. But there may be cases when it is not possible to make such a pre- diction. In these circumstances, a two-tailed test is used, for which there are two areas of rejection – both the upper and lower tails. For example, for the *z* distri- bution where p  0.05 and a two-tailed test, statistical tables show that the area of acceptance for the null hypothesis is the central 95 per cent of the distribution and the areas of rejection are the 2.5 per cent of each tail (see Figure 12.13). Hence, if the test statistic is less than 1.96 or greater than 1.96 the null hypothesis will be rejected.



5.0

4.5

4.0

3.5

3.0

2.5

Acceptance

2.0

1.5

1.0

0.5

0.0

area

Rejection

area

Rejection

area

0

**1.96**

40

60

**1.96**

100

**FIGURE 12.13** AREAS OF ACCEPTANCE AND REJECTION IN A STANDARD NORMAL DISTRIBUTION WITH   0.05

***Selection of appropriate statistical tests***

The selection of statistical tests appropriate for each hypothesis is perhaps the most challenging feature of using statistics but also the most necessary. It is all too easy to formulate a valid hypothesis only to choose an inappropriate test, with the result – statistical nonsense! The type of statistical test used will depend on quite a broad range of factors.

First, the type of hypothesis – for example, hypotheses concerned with the characteristics of groups, compared with relationships between variables. Even within these broad groups of hypotheses different tests may be needed. So a test for comparing differences between group means will be different to one com- paring differences between medians. Even for the same sample, different tests may be used depending on the size of the sample.

Secondly, assumptions about the distribution of populations will affect the type of statistical test used. For example, different tests will be used for popula- tions for which the data are evenly distributed compared with those that are not. A third consideration is the level of measurement of the variables in the hypothesis. As we saw earlier, different tests are appropriate for nominal, ordinal, interval and ratio data, and only non-parametric tests are suitable for nominal and ordinal data, but parametric tests can be used with interval and ratio data. Parametric tests also work best with large sample sizes (that is, at least 30 obser- vations per variable or group) and are more powerful than non-parametric tests. This simply means that they are more likely to reject the null hypothesis when it should be rejected, avoiding Type I errors. Motulsky (1995) advises that paramet- ric tests should usually be selected if you are sure that the population is normally distributed.Table 12.15 provides a summary of the kinds of statistical test available

in the variety of circumstances just described.

**TABLE 12.15** GUIDE TO SELECTION OF STATISTICAL TESTS

**Type of Data**

|  |  |  |  |
| --- | --- | --- | --- |
| **Survey** | **Independent** | **Dependent** | **Potential** |
| **objectives** | **variable** | **variable** | **statistical test** |

**For objectives with one dependent and one independent variable**

Compare departments in frequency of issue of written warnings

Compare an experimental and control group in their attitudes after

‘anti-smoking’ campaign

Compare attitudes across five company departments to new working practices

Determine if high scores on measurement of confidence predict high scores on test of ability

Nominal: groups (departments)

Nominal (dichotomous): groups (experimental and control)

Nominal: more than two values

Quantifiable (attitude scores)

Nominal (number of written warnings)

Quantifiable (attitude scores)

Quantifiable (attitude scores)

Quantifiable (knowledge scores)

Chi-square, Fisher’s exact test

One-sample *t*-test, dependent *t*-test and independent *t-*test; Wilcoxon signed-ranks test; Wilcoxon rank-sum test

One-way analysis of variance (using the *F*-test)

Regression (when neither variable is dependent or independent, use correlation)

**For objectives with two or more independent variables**

Compare manual and white collar staff in experiment and control groups with respect to attitudes

Determine if length of service and salary level relate to attitudes

Compare men and women in experimental and control groups in their attitudes when their salary level is controlled

Nominal (manual and white collar)

Quantifiable (length of service and salary level)

Nominal (gender and group) with confounding factors (salary level)

Quantifiable (attitude scores)

Quantifiable (attitude scores)

Quantifiable (attitude scores)

Analysis of variance (ANOVA)

Multiple regression

Analysis of covariance (ANCOVA)

**For objectives with two or more independent and dependent variables**

Compare men and women in experimental and control groups in their attitude and knowledge scores

Nominal (gender and group)

Quantifiable (scores on two measures: attitudes and knowledge)

Multivariate analysis of variance (MANOVA)

*Source:* Adapted from Fink, 1995c

***Calculation of the test statistic and acceptance or rejection of the hypothesis***

Provided that the above stages have been performed accurately, the final stage, using an appropriate statistical software program, should be relatively straight- forward. Once the test statistic is calculated, the final task is to compare this with the hypothesized value. If the test statistic does not reach this value, then the null hypothesis must be accepted.

A government department sets up a research study to examine a possible relationship between personality traits and absenteeism. Using a sample of 22 employees, it sets the significance level at p  0.05. Analysing the data using the Pearson product moment correlation attains a value for this association of *r*  0.287. This value is looked up in a special table of critical values for this particular test. (NB: Critical value tables can be found in many statistics text- books.) The critical value for a one-tailed test with 20 degrees of freedom (i.e. *n*  2) is found to be 0.360. Hence, the correlation between personality traits and absenteeism is not found to be significant.

**Worked Example 12.1**

In the sections that follow, we will take some examples from Table 12.15 and describe them for the purpose of illustration.

**STATISTICAL ANALYSIS: COMPARING VARIABLES**

In this section and the one that follows, we will be performing a number of statistical tests. It will be assumed that most readers will have access to Excel, so this, rather than other programs such as SPSS, will be used. However, sometimes even using Excel calculations can get quite complicated, so in these cases the calcula- tions will be illustrated for you in the text.

***Nominal data – one sample***

In the following section we will look at comparing relationships *between* variables, but here we will confine ourselves to exploring the distribution *of* a variable. First, if we assume a pre-specified distribution (such as a normal distribution), we can compare the observed (actual data) frequencies against expected (theoretical) frequencies, to measure the *goodness-of-fit*.

Let us say that a company is interested in comparing disciplinary records across its four production sites by measuring the number of written warnings issued in the past two years. We might assume that, since the sites are of broadly equal size in terms of people employed, the warnings might be evenly spread across these sites, that is, 25 per cent for each. Since the total number of recorded

**TABLE 12.16** CONTINGENCY TABLE OF DATA FOR ANALYSIS

**Cases**

**Site Observed Oi Expected Ei**

|  |  |  |
| --- | --- | --- |
| A | 12 | 29 |
| B | 68 | 29 |
| C | 14 | 29 |
| D | 22 | 29 |
| Total | 116 | 116 |

**TABLE 12.17** ANALYSIS OF DATA IN TABLE 12.16

**i i**

**(O**  **E )2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Site** | **Observed Oi** | **Expected Ei** | **Ei** |
| A | 12 | 29 | 9.97 |
| B | 68 | 29 | 52.45 |
| C | 14 | 29 | 7.76 |
| D | 22 | 29 | 1.69 |
| Total | 116 | 116 | 71.86 |

written warnings is 116 (see Table 12.16), this represents 29 expected warnings per site. Data are gathered (observed frequencies) to see if they match the expected frequencies. The null hypothesis is that there will be no difference between the observed and expected frequencies. Following our earlier advice, we set the level of significance in advance. In this case let us say that we set it at p 

0.05. If any significant difference is found, then the null hypothesis will be rejected.Table 12.16 presents the data in what is called a contingency table.

The appropriate test here is the chi-square statistic. For each case we deduct the expected frequency from the observed frequency and square the result and divide by the expected frequency; the chi-square statistic is the sum of the totals (see Table 12.17).

Is the chi-square statistic of 71.86 significant? To find out, we look the figure up in an appropriate statistical table for the chi-square statistic.The value to use will be in the column for p  0.05 and for 3 degrees of freedom (the number of categories minus one). This figure turns out to be 7.81, which is far exceeded by our chi-square figure. Hence, we can say that the difference is significant and we can reject the null hypothesis that there is no difference between the issue of written warnings between the sites.

Note, however, that the expected frequencies do not have to be equal. Say, we know through some prior research that site B is three times as likely to issue warnings as the other sites.Table 12.18 presents the new data.

Here we find that the new chi-square statistic is only 6.34, which is not significant. Diamantopoulos and Schlegelmilch (1997) warn that when the num- ber of categories in the variable is greater than two, the chi-square test should not be used where:

**TABLE 12.18** EXAMPLE OF A ONE-SAMPLE CHI-SQUARE TEST WITH UNEVEN EXPECTED FREQUENCY

**i i**

**(O**  **E )2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Site** | **Observed Oi** | **Expected Ei** | **Ei** |
| A | 12 | 19.33 | 2.78 |
| B | 68 | 58.00 | 1.72 |
| C | 14 | 19.33 | 1.47 |
| D | 22 | 19.33 | 0.37 |
| Total | 116 | 116.00 | 6.34 |

* More than 20 per cent of the expected frequencies are smaller than 5.
* Any expected frequency is less than one.

If the numbers within cells are small, and it is possible to combine adjacent categories, then it is advisable to do so. For example, if some of our expected fre- quencies in Table 12.14 were rather small but sites A and B were in England and site C and D in Germany, we might sensibly combine A with B and C with D in order to make an international comparison study.

***Nominal groups and quantifiable data (normally distributed)***

Let us say that you want to compare the performance of two groups, or to com- pare the performance of one group over a period of time using quantifiable vari- ables such as scores. In these circumstances we can use a paired *t*-test. *T*-tests assume that the data are normally distributed, and that the two groups have the same variance (the standard deviation squared). If the data are not normally dis- tributed then usually a non-parametric test, the Wilcoxon signed-ranks test, can be used.The *t*-test compares the means of the two groups to see if any differences between them are significant. If the p-value associated with *t* is low ( 0.05), then there is evidence to reject the null hypothesis.

Say that we want to examine the effectiveness of a stress counselling pro- gramme. Recall Chapter 4 on research design where we saw that we should avoid using a pre*-*test/post*-*test design due to the danger of confounding vari- ables.Table 12.19, therefore, shows that we have randomly divided our sample of employees into two groups, an experimental and control, and assessed the stress levels of each group before and after the programme. Of course, only the exper- imental group receives the stress counselling. Each worker in the sample provides a self-assessed score of their stress levels on a scale of 1–20, with 20 being the maximum.

We can see from Table 12.19 that in a number of cases the levels of stress have actually increased! But in most cases, particularly in the experimental group, stress levels have fallen, in some cases quite sharply. Worked Example 12.2 shows how we can use Excel to see if this is statistically significant.

**TABLE 12.19** STRESS SCORE DATA FOR EXPERIMENTAL AND CONTROL GROUPS BEFORE AND AFTER A STRESS COUNSELLING PROGRAMME

**Stress score: A1 Stress score: A2 Gain scores:**

**(pre-counselling) (post-counselling) A2 – A1**

**Experimental group (receiving the counselling)**

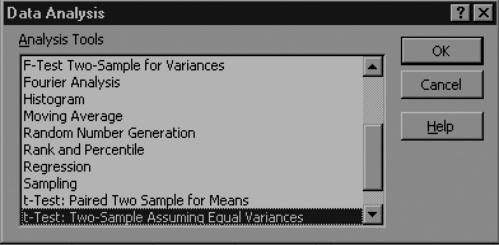
|  |  |  |  |
| --- | --- | --- | --- |
| Employee A | 15 | 9 | 6 |
| Employee B | 18 | 14 | 4 |
| Employee C | 4 | 6 | 2 |
| Employee D | 8 | 7 | 1 |
| Employee E | 16 | 8 | 8 |
| Employee F | 15 | 4 | 11 |
| Employee G | 20 | 10 | 10 |
| Employee H | 17 | 10 | 7 |
| **Control group (not** |  |  |  |
| **receiving counselling)**  Employee J | 13 | 11 | 2 |
| Employee K | 16 | 17 | 1 |
| Employee L | 7 | 9 | 2 |
| Employee M | 4 | 4 | 0 |
| Employee N | 14 | 11 | 3 |
| Employee O | 16 | 15 | 1 |
| Employee P | 9 | 8 | 1 |
| Employee Q | 8 | 9 | 1 |

Cut and paste the gain scores for both the experimental and control groups into an Excel spreadsheet, making sure that each set of figures is in a sepa-

rate column. Under Tools/Data Analysis, select the *t*-Test: Two Samples Assuming Equal Variances (as in the graphic).

Place your cursor in the Variable 1 range, then sweep across your first column of gain scores data. Repeat the process for Variable 2 for your second column (the control group data). For Output options, select Output range. After click- ing on [OK] you should see the following data:

*(Continued)*



**Worked Example 12.2**

|  |  |  |
| --- | --- | --- |
|  | *Variable 1* | *Variable 2* |
| Mean | 5.625 | 0.375 |
| Variance | 19.696 | 2.839 |
| Observations | 8.000 | 8.000 |
| Pooled Variance | 11.268 |  |
| Hypothesised Mean Difference | 0.000 |  |
| df | 14.000 |  |
| t Stat | 3.128 |  |
| P(Tt) one-tail | 0.004 |  |
| t Critical one-tail | 1.761 |  |
| P(Tt) two-tail | 0.007 |  |
| t Critical two-tail | 2.145 |  |

***Nominal groups and quantifiable data (not normally distributed)***

*t*-Test: Two-Sample Assuming Equal Variances

Notice that the mean scores of the two groups are quite different – always

a good sign that there may be statistical significance. To check whether this is true, take the *t*-statistic, in this case 3.128, and compare it with the *t*-value for a two-tailed test at a specified level (0.01, 0.05) of statistical significance. We can see that the *t*-statistic is greater so we can conclude that the change in gain scores *is* significant. The stress counselling worked!

In the section above we looked at differences in normally distributed data between groups. But what if the data do not satisfy the assumptions required for statistical tests based on normal distribution? Let us say that we work for a retail store that wants to evaluate the impact of two alternative layouts for its clothing departments. Two sections of the department are re-designed and, over a two- week period, a random sample of customers purchasing goods in each section is asked to award a score out of 100 for the quality of layout. Table 12.20 presents the findings, with each set of data awarded a ranking. These rankings were auto- matically generated in Excel using the Tools/Data Analysis/Rank and Percentile feature. Note that where scores are tied (a common feature of ordinal data) the program automatically allocates them the same rank – in this case, both scores of

**TABLE 12.20** RANKING OF TWO RETAIL STORE FEATURES BASED ON CUSTOMER SCORING

|  |  |  |  |
| --- | --- | --- | --- |
| **Scores for Section A** | **Ranking** | **Scores for Section B** | **Ranking** |
| 60 | 5 | 42 | 10 |
| 92 | 1 | 50 | 8 |
| 50 | 8 | 38 | 11 |
| 35 | 12 | 58 | 6 |
| 75 | 4 | 55 | 7 |
| 84 | 3 | 26 | 13 |
| 88 | 2 |  |  |
| Totals | 35 |  | 55 |

50 are given an 8th position.The null hypothesis is that there will be no difference between the two sets of scores.

For data of this type the Mann Witney U-test is valid.

|  |  |
| --- | --- |
| **Worked Example 12.3** |  |
| We work out the values for U1 for one group and U2 for the other, which is calculated by the formula for the Mann Witney U-test:  n1 (n1  1)  U1  n1 n2   R1 2  n2 (n2  1)  U2  n1 n2   R2 2  Here n1 (7) and n2 (6) are the size of the two groups, R1 (35) and R2 (55) the sum of the rankings. Therefore, we have:  7 (7  1)  U1  6  7   35  35  2  6 (6  1)  U2  6  7   55  8  2  We then check the values for U1 and U2 in the relevant statistical table and find that for a two-tailed test with n1 equal to 7 and n2 equal to 6, at the p  0.05 level, the critical values of U are 6 and 36. Hence, to reject the null hypothe- sis, the value of U in one case must be less than 6 and in the other greater than 36. Our data reveal that this is not the case, so the null hypothesis cannot be rejected. Back to the drawing board for that store layout! | |

**TABLE 12.21** SUMMARY OF STATISTICAL TESTS AVAILABLE FOR MEASURING ASSOCIATION BETWEEN TWO VARIABLES

**Association Measure**

Between two nominal variables Cramer’s V

Between two ordinal variables Spearman rank-order correlation (where the relationship is non-linear)

Between interval and/or ratio scale variables Pearson’s product moment correlation

(where the relationship is linear)

Note that the Mann Witney U-test is also useful in other situations. Say, for example, we employ two different training programmes that teach the same topic and want to see which is the most effective. If it cannot be assumed that the data come from a normal distribution, we would use the Mann Witney U-test to compare the test scores of the two sets of learners.

**STATISTICAL ANALYSIS: ASSOCIATIONS BETWEEN VARIABLES**

This section examines situations where the study contains two independent vari- ables of the same type (nominal, ordinal, interval/ratio).Table 12.21 illustrates the different kinds of measurement of association between two variables, depending on the type of variable involved.

***Associations between two nominal variables***

Sometimes we may want to investigate relationships between two nominal vari- ables – for example:

* Educational attainment and choice of career.
* Type of recruit (graduate/non-graduate) and level of responsibility in an organization.

You will recall in the discussions about chi-square, above, that we used the statis- tic to see whether the distribution of a variable occurred by chance or not. Cramer’s V (which is an extension of the chi-square statistic) takes this a stage further and determines the *strength* of the relationship.

The value of Cramer’s V ranges from 0 to 1, and is represented by the formula:

2

V = *n* (*k*  1)

r

**TABLE 12.22** OBSERVED AND EXPECTED VALUES OF GRADUATE AND

NON-GRADUATE EMPLOYMENT AGAINST RESPONSIBILITY LEVEL WITHIN AN ORGANISATION

**Educational attainment**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Non-graduate** | **Graduate** | **Total** |
| **Actual**  Executive | 2 | 10 | 12 |
| Managerial | 20 | 80 | 100 |
| Administrative | 70 | 64 | 134 |
| Manual | 240 | 4 | 244 |
| Total | 332 | 158 | 490 |
| **Expected**  Executive | 8.13 | 3.87 | 12 |
| Managerial | 67.76 | 32.24 | 100 |
| Administrative | 90.79 | 43.21 | 134 |
| Manual | 165.32 | 78.68 | 244 |
| Total | 332 | 158 | 490 |

Here, you divide the chi-square value by *n* (the sample size) multiplied by (*k*  1) where *k* is the smaller of the number of columns or rows in the original contin- gency table.You then take the square root of this figure.

Let us say that a company wishes to evaluate its graduate recruitment policy by comparing how well its graduates do compared with non-graduates in terms of the levels of responsibility that they reach in the organization. The null hypothesis is that there will be no difference between the levels of seniority of graduates compared to non-graduates. Table 12.22 provides data on both the observed and expected values.The expected values are calculated by dividing the column total by the grand total then multiplying by the row total. Hence, for executive, non-graduates, the calculation is 332/490  12  8.13.

We calculate chi-square in the same way as a one-sample and find that *2* 

238.1. This gives us:

0.49 = ) 238.1

490 (2  1)

The number of degrees of freedom for a 4  2 contingency table is *v*  (4  1)

 (2  1)  3. For an significance level where p  0.05 at 3 degrees of freedom, we find that the chi-square statistic is highly significant. Thus, we can reject the null hypothesis that ‘graduateness’ makes no difference to seniority in the organization. Maybe we should recruit more people with degrees!

**Worked Example 12.4**

***Correlation analysis: principles of measurement***

Correlation analysis is concerned with *associations* between variables. Correlations are sometimes confused with regression. As Fink (1995c) makes clear, however, correlation is concerned with describing relationships (for example,between *X* and *Y* ), while regres- sion predicts a value (say, *X* based on a value of *Y*). When an association is measured numerically, we get a correlation coefficient that gives the strength and the direction of the relationship between two variables. In addition to the strength of a relationship, we might also be interested in the *direction* of an association. Such relationships can be the basis of some very important questions in organizational analysis. For example,

* Does the introduction of performance management techniques to specific groups of workers improve morale compared to other groups? (Relationship: performance management/morale)
* Is there a relationship between size of company (measured by size of work- force) and efficiency (measured by output per worker)? (Relationship: com- pany size/efficiency)
* Do measures to improve health and safety inevitably reduce output? (Relationship: health and safety procedures/output)

The most commonly used coefficients assume a *linear* relationship between the variables, with Figure 12.14 illustrating an idealized form of ‘perfect’ linear correlation. Measured numerically, this would give a perfectly positive correlation coefficient of 1.0 for (a) and perfectly negative correlation of 1.0 for (b).Very crudely, if an association is between 0 and 0.4 it is said to be ‘weak’, between 0.4 and 0.8 ‘moderate’ and above 0.8, ‘strong’. Figure 12.15, however, shows a much more likely type of correlation where the variables are highly positively corre- lated.The points shown all fall close to a cigar-shaped envelope.The thinner this envelope, the stronger the correlation, while the broader the envelope, the weaker the correlation.Where the points are scattered so much as to appear entirely ran- dom, then the correlation is likely to be zero, or close to it.

The correlation coefficient is calculated in a number of ways, depending on the type of data being used.This section focuses on bivariate relationships, that is, associations between just two variables. Calculating a correlation for a set of data should only be done when:

* The subjects are independent and not chosen from the same group.
* The values for *X* and *Y* are measured independently.
* *X* and *Y* values are sampled from populations that are normally distributed.
* Neither of the values for *X* or *Y* is controlled (in which case, linear regression, not correlation, should be calculated).

***Associations between two ordinal variables***

Sometimes it is not possible to give values to variables, only ranks (1st, 2nd, 3rd, etc.). Let us take the example of a case where we are judging the performance of

High

Low

High

Low



Low

(a)

High

Low

(b)

High

**FIGURE 12.14** PERFECT POSITIVE CORRELATION (LEFT) AND PERFECT NEGATIVE RELATIONSHIP (RIGHT)

High

Low

Low High

**FIGURE 12.15** EXAMPLE OF A HIGHLY POSITIVE CORRELATION WITH CIGAR-SHAPED ENVELOPE

five new office administrators.Two supervisors are asked to rank the performance of the administrators with the results presented in Table 12.23.

For data that is ranked, or in circumstances where relationships are non- linear, Spearman’s rank-order correlation, often known as Spearman’s rho, can be used, calculated by the following formula, where *D* is the rank difference for any member.

6*D* 2

*p*  1  *n* (*n*2  1)

Taking the data in Table 12.23 we can obtain values for *D* 2, as presented in Table 12.24.

|  |  |  |
| --- | --- | --- |
| **TABLE 12.23** | RANKINGS OF JUDGEMENTS MADE BY SUPERVISORS ON THE  PERFORMANCE OF FIVE ADMINISTRATORS |  |
| **Supervisor** | **Alice Raj Jo Beth** | **Sid** |
| Mr Jones | 5 2 4 3 | 1 |
| Mrs Smith | 4 1 3 5 | 2 |

**TABLE 12.24** COMPARISON OF RANKING DIFFERENCES BETWEEN THE TWO JUDGES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Supervisor** | **Alice** | **Raj** | **Jo** | **Beth** | **Sid** |
| Mr Jones | 5 | 2 | 4 | 3 | 1 |
| Mrs Smith | 4 | 1 | 3 | 5 | 2 |
| *D* 1 | | 1 | 1 | 2 | 1 |
| *D* 2 1 | | 1 | 1 | 4 | 1 |

The value of *D* is obtained by subtracting the ranks of Mrs Smith from

those of Mr Jones, after which we obtain *D* 2 by squaring the results. Thus,

*D 2*  1  1  1  4  1  8, with *n*  5 (the number of people being ranked). This give us:

*p*  1 

6  8

5 (25  1)

 0.6

To interpret this figure, we look at the appropriate statistical table for

Spearman’s rho. We find that for a two-tailed test with 3 degrees of freedom (*v*  *n*2), we would need to obtain a coefficient of 0.805 to achieve statistical significance at the 10 per cent level (  0.1). We have, therefore, to accept the null hypothesis that there is no significant correlation between the two judgements.

**Worked Example 12.5**

***Associations between numerical variables***

It is often the case that organizational researchers want to explore potential associations between variables such as income or age and various human activities such as spending patterns. Another use would be comparing sales figures against

the number of sales representatives a company employs – do sales rise as more representatives are used? When exploring relationships between numerical data (interval and/or ratio) such as sales figures, age or income, then we can use the Pearson product moment correlation. Note, however, that this statistical test is only appropriate if the relationships between variables are linear. In some cir- cumstances there my be strong associations between variables but the relationship may be  or -shaped. The Pearson product moment correlation would not be able to detect this. For non-linear associations it is best to use the Spearman’s rho calculation.

**Worked Example 12.6**

Let us take the example of a cosmetics company that wants to know if there is any association between the sales of one of its face creams and the weather. Are people put off from using face cream if the weather is wet? To discover if there is a relationship, the company looks at sales figures and annual rainfall patterns over the past five years and produces the data pre- sented in Table 12.25.

**TABLE 12.25** ASSOCIATION BETWEEN ANNUAL

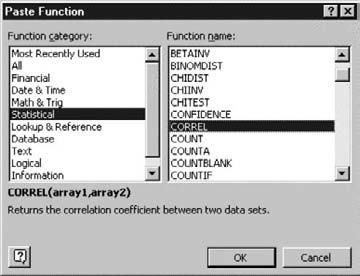
RAINFALL AND ANNUAL SALES OF FACE CREAM OVER A TEN-YEAR PERIOD

|  |  |  |
| --- | --- | --- |
| **Year** | **Rainfall (cm)** | **Sales (£000s)** |
| 2002 | 50 | 92 |
| 2001 | 43 | 155 |
| 2000 | 48 | 120 |
| 1999 | 30 | 162 |
| 1998 | 35 | 150 |
| 1997 | 62 | 100 |
| 1996 | 40 | 130 |
| 1995 | 29 | 160 |
| 1994 | 31 | 155 |
| 1993 | 65 | 82 |

Paste the data into an Excel spreadsheet, then click on the Function wizard [***f***x]. Under Statistical, select CORREL for correlation.

With the cursor in the Array 1 box, sweep the first column or row of data, and

repeat this process for Array 2 and the second column or row of data. Click on [OK] and you should be given a value of 0.91715, which means that the association is strongly negatively correlated. So, as it rains, people make less use of our face cream – maybe there is something wrong with it!



**SUMMARY**

* The selection of statistical tests should be made at the design stage of the research and not as an afterthought.
* Data can be classified into categorical data (which includes nominal and ordinal) and quantifiable data (which includes interval and ratio). The types of data yielded by a study will determine the kinds of analysis and statistical tests applied to them.
* Data may be presented descriptively through the use of pie charts, bar charts and histograms or through the use of descriptive statistics. The latter focus on themes such as the distribution of the data and its dispersion.
* Inferential statistics are used to draw conclusions from the data and involve the specification of a hypothesis and the selection of appropriate statistical tests.
* Some of the inherent danger in hypothesis testing is in making Type I errors (reject- ing a hypothesis when it is, in fact, true) and Type II errors (accepting a hypothesis when it is false).
* For categorical data, non-parametric statistical tests can be used, but for quantifi- able data, more powerful parametric tests need to be applied. Parametric tests usu- ally require that the data are normally distributed.

**Further reading**

Black, T. (2001) *Evaluating Social Science Research,* 2nd edn.London: Sage. Provides an clearly written introduction to evaluating research projects. The last chapter (in the second edition) contains a very useful introduction to using Excel as a data analysis tool.

Fielding, J. and Gilbert, N. (2000) *Understanding Social Statistics.* London: Sage. Comprehensive and clearly articulated. Illustrates how to perform sta- tistical calculations using SPSS, one of the most popular statistical programs.

Hosker, I. (2002) *Social Statistics: Data Analysis in Social Science Explained.* Taunton: Studymates. A very short and simple text for those truly terrified by statistics!

## Collecting and analysing qualitative data

**13**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Distinguish between the aims and methods used in quali- tative and quantitative research.**
* **Select appropriate qualitative methods, including content analysis and grounded theory approaches.**
* **Apply qualitative methods to produce valid, reliable and trustworthy data.**

We saw in Chapter 2 that while some research methodologies tend to utilize either quantitative *or* qualitative methods, very often both are used.This is because qualitative data can provide rich descriptions and explanations that demonstrate the chronological flow of events as well as often leading to serendipitous (chance) findings. According to Miles and Huberman (1994) qualitative studies have a quality of ‘undeniability’ because words have a more concrete and vivid flavour that is more convincing to the reader than pages of numbers. However, qualita- tive analysis has been criticized for being lacking in methodological rigour, prone to researcher subjectivity and based on small cases or limited evidence. We will explore how qualitative analysis addresses such problems later in this chapter.

Qualitative analysis is (or should be) a rigorous and logical process through which data are given meaning. Through analysis, we can progress through an initial description of the data then, through a process of disaggregating the data into smaller parts, see how these connect into new concepts, providing the basis for a fresh description. As we saw in Chapter 2, there are different approaches to quali- tative research, including grounded theory, ethnography and phenomenology, researchers often using a combination of approaches in one research project. One of the major issues in qualitative research is the extent to which data should be analysed. As Strauss and Corbin (1998) point out, some researchers believe that the data should not be analysed at all, but should merely be presented.This allows the data to ‘speak for themselves’, untainted by the potential subjective interpretations

of the researcher. Other qualitative researchers are concerned, however, with accurate selection, synthesis and description of the data, but in as detached and objective a way as possible. Other researchers are more concerned with theory building, interpreting the data to build concepts and categories that can be brought together into theoretical frameworks. In contrast, some researchers see qualitative research as primarily being about storytelling and description (Wolcott, 1994).

In this chapter we will look at the possible sources of qualitative data and approaches to how data can by analysed, looking particularly at content analysis and grounded theory methods and also including some increasingly influential approaches such as the use of narratives, conversational analysis and discourse analysis. The important issues of reliability and validity will also be addressed, but more from the stance of those who favour interpretivist and naturalistic approaches.

**CHARACTERISTICS OF QUALITATIVE RESEARCH**

Qualitative research can take many forms and results from the use of data gather- ing instruments such as observations, interviews, questionnaires and document analysis.While, even today, qualitative research is often regarded in some quarters as less valid and reliable as its quantitative cousin, qualitative data can be a power- ful source of analysis. First, qualitative research is highly contextual, being collected in a natural ‘real life’ setting, often over long periods of time. Hence, it goes beyond giving a mere snapshot of events and can show how and why things happen – also incorporating people’s own motivation, emotions, prejudices and incidents of interpersonal cooperation and conflict (Charmaz, 1995). Far from lacking scientific rigour, qualitative research can even be used for testing hypotheses to see if theoretical propositions can be supported by the evidence.

As Miles and Huberman (1994) show, most qualitative research involves a

number of characteristics:

* It is conducted through intense contact within a ‘field’ or real life setting.
* The researcher’s role is to gain a ‘holistic’ or integrated overview of the study, including the perceptions of participants.
* Themes that emerge from the data are often reviewed with informants for verification.
* The main focus of research is to understand the ways in which people act and account for these actions.
* Qualitative data are open to multiple interpretations (but some are more com- pelling than others either on theoretical grounds or because of internal consistency).

Unlike more quantitative data, qualitative data are rarely accessible for imme- diate analysis, but require a processing stage often involving the editing of notes and transcribing of tape recordings. An important first step is to codify notes that

Data collection

Data display

Data reduction

Drawing

conclusions/ verification

**FIGURE 13.1** AN INTERACTIVE MODEL OF QUALITATIVE DATA ANALYSIS (ADAPTED FROM MILES AND HUBERMAN, 1994)

are taken in the field (recall Chapter 10 and the taking of field notes as part of observation). Such field notes may also often contain remarks or reflections of the researcher, taken whilst in the field. Analysis does not necessarily occur sequen- tially after data collection, but simultaneously with it and involves the teasing out of patterns, themes and groupings in the data. This is part of the process of *data reduction* through which the sheer volume of data is reduced and made not only more manageable but more coherent. Further data gathering may then ensue where more evidence of these patterns and themes is sought. Finally, in drawing conclusions, attempts are made to find consistencies in these themes and patterns so that generalizations can be drawn and compared with the relevant body of constructs and theories for verification.The relationships between data collection, data reduction, data display and the drawing of conclusions and the verifying of data are illustrated in Figure 13.1. Presented here is not so much a sequential process but an interactive one, where, even at the final stage of writing up, gaps or inconsistencies may trigger the need for further data collection.

**QUALITATIVE RESEARCH DESIGN**

We saw in Chapter 1 that qualitative research is often associated with inductive research designs. But it would be wrong to assume that qualitative researchers always enter a field of study with no prior theoretical assumptions or research questions. For highly ethnographic studies this may be the case. But often, quali- tative researchers will wish to impose at least some structure on the study in terms of the kinds of questions that are being asked, the focus of the research and the selection of field sites. The amount of structure required will depend on factors such as the time available and how much is already known about the phenome- non. Other decisions then have to be made about what is going to be researched (including the units of analysis and the sampling frame).

Government debate

Level of street

crime

‘Liberal’ arresting

policy

New arresting

profile

Public debate

Rank and file police

attitudes to liberalization

**FIGURE 13.2** CONCEPTUAL FRAMEWORK FOR A RESEARCH PROJECT ON DRUG LIBERALIZATION AND POLICING

***Conceptual frameworks***

Miles and Huberman (1994) talk about the structure of research being formulated as a *conceptual framework* that describes in narrative, but often in graphical format, the key factors, constructs and variables being studied – and the presumed rela- tionship between them. Of course, whether this relationship really exists is one of the elements of the study. Miles and Huberman conceive of this conceptual framework as a series of intellectual ‘bins’ containing key events and behaviours. Hence, Figure 13.2 shows a study of new ‘liberal’ policing policies which have de-criminalized possession of ‘soft’ drugs, and a hypothesized conceptual framework containing inter-related bins. For example, it is believed that the new policy will change the profile of arrests, with fewer people being arrested for possession of soft drugs (that is, the policy is being effectively implemented by officers on the street) and that this will reduce the level of street crime. Producing a conceptual frame- work forces the researcher to specify what it is that is going to be studied and what is going to be omitted, and hypothesized relationships between key vari- ables.This, of course, is not a hypothesis in the positivistic sense, but a way of alert- ing the researcher to the possible relationships that exist and which can be explored.

|  |  |
| --- | --- |
| **Activity 13.1** |  |
| Examine Figure 13.2. Do you agree with its hypotheses? Draw an alternative conceptual framework adding new bins and relationships. | |

**TABLE 13.1** ORIENTATION OF RESEARCH QUESTIONS

**Orientation Resulting questions**

States Which type of object, event or behaviour is this?

How often does this event occur? What caused it?

How is it maintained?

Processes How is the object, event or behaviour changing over time?

What are the consequences of this process? What strategies are being used?

***Research questions***

Of course, if the research design is entirely inductive, there may be no formula- tion of a priori questions for study. With most qualitative designs, however, there will be, at least, a set of tentative issues that require addressing. As Flick (1998) notes, the less clearly research questions are formulated, the greater the chance that researchers will find themselves confronted with mountains of data. If issues are formulated as a conceptual framework, this in turn leads naturally to the design of research questions. Again using Figure 13.2 as an illustration, we might ask about the actual impact of policy changes on practice (the number and pro- file of drug-related arrests), and how rank and file police attitudes have mediated between policy and practice. Like the conceptual framework, research questions allow the researcher to see where the boundaries of the study lie.

Of course, having established the research questions, the researcher still has

to remain open to new and perhaps unexpected results (Flick, 1998). Research questions can be orientated towards describing states or describing processes, as Table 13.1 shows.

***Units of analysis***

As in any research approach, in qualitative research decisions have to be taken at the design stage on the unit of analysis to be used. Typically, this might include: individuals, groups, organizations or communities. Using health care as an example, the research might focus on individuals (patients, doctors, nurses and other health care professionals), groups (the hospital management board), organizations (hospi- tals or professional bodies) and communities (a town and its hospitals and local surgeries).

***Sampling***

We saw in Chapter 4 that experimental and quasi-experimental research designs are concerned to use samples that are as representative as possible of the population under study – hence the use of random probability sampling. In qualitative research this approach is usually impractical or rejected by researchers on epistemological grounds. Qualitative research, then, often works with small samples of people,

cases or phenomena nested in particular contexts. Hence, samples tend to be more *purposive* than random.Again, in contrast to more quantitative approaches, samples may not always be pre-planned in advance, but may evolve once fieldwork has begun. So an initial choice of informants may lead to a decision to select a more contrasting set of deviant subjects (cases) as a comparison (Lincoln and Guba, 1985). A wide range of qualitative sampling strategies suggested by Patton (1990) is presented in Table 13.2.

|  |  |
| --- | --- |
| **Activity 13.2** |  |
| Examine the sampling strategies in Table 13.2. Which of them can be most easily defended for potentially yielding valid results? Which are most suscep- tible to accusations of invalidity?  *Suggested answers are provided at the end of the chapter.* | |

Very often it is not a case of selecting between the various approaches illus- trated in Table 13.2 but combining some of them into *multiple case sampling*. By using a number of cases that yield similar findings we can show replication (recall Figure 6.4 in Chapter 6) hence strengthening claims for the validity of findings and the grounds for their generalizability. What is needed, however, is an explicit *sampling frame* where, between them, the cases cover the various issues and vari- ables detailed in the study’s research questions. Miles and Huberman (1994) advise that the best strategy is to initially target those cases that are most likely to yield the richest data, leaving more peripheral cases until later. But peripheral sampling is still important because it may often yield negative or exceptional cases (those that contradict the initial case findings).

**COLLECTING QUALITATIVE DATA**

We have seen in a number of previous chapters that qualitative data emerge from a wide spectrum of sources. One of the most common is field studies where the researcher enters a selected setting to gather data, often through the use of obser- vations or interviews.While observation is likely to elicit qualitative data (such as field notes and analysis) interviews may be used to collect both qualitative and quantitative information. Similarly, case studies might involve the use of research instruments such as questionnaires, interview schedules and observations, all of which might yield data that is qualitative in nature.

***Field notes***

As we saw in Chapter 10, field notes remain one of the mainstays of qualitative data collection methods. They can be supplemented by diaries written by

**TABLE 13.2** SAMPLING STRATEGIES IN QUALITATIVE RESEARCH

**Sampling strategy Description**

Comprehensive Examines every case or instance in a given population (e.g. sampling suicides amongst insurance salespeople)

Intensity sampling Looks for information-rich cases, and ones that are more typical

than those at the extremes

Deviant case Selects at two extremes (e.g., punctual and unpunctual staff) sampling and tries to identify factors that influence these predispositions.

Can yield focused information but poses dangers in generalizing from extreme cases

Maximum variation Seeks to look for a wide range of variations and patterns sampling across the sample. Includes examining outlier cases to see if the

main pattern still holds

Homogenous sampling The opposite of maximum variation, seeks homogenous groups of people to be studied in depth. Focus group interviews are

typically conducted with such homogenous groups

Typical case sampling Highlights what is ‘normal’ or average in order to illuminate the

whole population. Since generalizing is involved, it becomes important to substantiate that the sample is typical, using other sources (e.g. statistical data or other findings)

Stratified purposeful Selecting a strata (e.g. infant schools, secondary schools sampling and colleges) and purposefully choosing cases (schools/colleges)

within each

Critical case sampling Similar to intensity sampling, but the focus is on one case or site that is deemed to be critical or crucial

Snowball sampling A first group of participants is used to nominate subsequent individuals or groups for study

Criterion sampling The sample is selected on the basis of the prime focus of the

study (e.g. early retirement); hence, all cases would be chosen to meet this criterion

Theory-based sampling A more formal type of criterion sampling, cases are chosen on the basis that they represent a theoretical construct

Confirming and Often a second-stage sampling strategy, where cases are disconfirming cases chosen on the basis that they can confirm or disconfirm emerging

patterns from the first stage

Purposeful random From a large possible set of choices, a limited number are sampling selected randomly

Comparable case Individuals, sites and groups representing the same relevant selection characteristic are chosen over a time period

Politically important A focus on key, politically important cases because these

cases are more likely to be noticed by policy makers and the results of the study more likely to be implemented

*Source*: Adapted from Patton, 1990

**Interviewee data summary**

Date of interview

…………………………………….

Place of interview

…………………………………….

Duration of interview

…………………………………….

Interviewer

…………………………………….

Identifier number for interviewee

…………………………………….

Gender of interviewee

…………………………………….

Age of interviewee

…………………………………….

Job role of interviewee

…………………………………….

Qualifications of interviewee

…………………………………….

Professional training of interviewee

undertaken in the past 3 years

…………………………………….

**FIGURE 13.3** EXAMPLE OF A DOCUMENTATION SHEET

researchers, and also by participants, so that triangulation can be performed. Photographs, drawings, maps and other visual material can also be added (see next section). Lofland and Lofland (1984) recommend that if field notes are supple- mented by tape recordings, these should be transcribed as quickly as possible, and that at least as much time should be spent studying and analysing the materials as spent in the interview itself. Flick (1998) also recommends the use of documen- tation sheets that provide useful summary information on the context within which the data were collected (see Figure 13.3).

Document sheets allow for an overview of the data and can provide a guide as to which files and transcripts to consult at the analysis stage.

***Photographs and other sources***

In addition to text, photographs or other visual data such as video or film record- ings are also sources of qualitative data. Photographs in particular have a long his- tory in ethnography and anthropology (Flick, 1998). Photographs allow the detailed recording of facts, including the presentation of lifestyles and living and working conditions. They can also capture processes that are too rapid for the human eye. Sometimes, the subjects of research can be encouraged to take on the

role of the photographer, documenting either a subject of their choice, or a theme that the researcher wants them to record. If desired, these photographs can subse- quently be used to stimulate an interview or encourage a participant to produce a narrative to accompany and expand upon the photographic evidence. This can be seen as a concretization of the focused interview (Flick, 1998).

But do photographs tell the truth? Of course, what the camera focuses on, and what it leaves out, is selective.There may also be problems of reactivity, with the subjects altering their behaviour in the presence of the photographer. Hence, there are always dangers of bias, and questions about the extent to which photographs help in the social construction of reality.

***Unobtrusive data***

As we saw in Chapter 11, organizations also contain a rich array of unobtrusive data in the form of documents such as company reports, business plans, written statements by members of staff, accounts and contracts. Most medium and large organizations also have dedicated websites that present a ‘public’ image to the world. Analysis of such a site may reveal not only the organization’s perception of itself and the image it wants to present to the world, but also what it does *not* wish to reveal. The organization’s intranet site and evidence from e-mail interactions may also prove of interest.

Atkinson and Coffey (1997) warn that it is not only the content of docu- ments that should be of concern to researchers, but also the way in which they are produced, circulated, read, stored and used for a variety of purposes. This means that they are not necessarily a description of ‘reality’ nor are they necessar- ily ‘transparent representations of organizational routines, decision-making processes or professional diagnoses’ (Atkinson and Coffey, 1997: 47). Although they should be treated seriously, documents should not be taken as factual evi- dence of what they report. Rather, they should be examined for their place within the organizational setting, and the cultural values attached to them. But con- versely, the temptation should be avoided to use only observational or oral data as the primary source and downgrade documentary evidence to a validating role. Atkinson and Coffey (1997) urge that documents should be regarded as valid sources in their own right.

**ANALYSING DATA: CONTENT ANALYSIS**

Analysis involves the process of breaking data down into smaller units to reveal their characteristic elements and structure (Dey, 1993: 30). Descriptions can lay the basis for analysis, but we need to go beyond description: we want to interpret, to understand and to explain. Through analysis, however, we can also gain new insights into our data. Data can be broken down into their constituent parts, and connections made between these concepts, providing the basis for new descrip- tions (see Figure 13.4).

Describing

Qualitative analysis

Connecting Classifying

**FIGURE 13.4** QUALITATIVE ANALYSIS AS A CIRCULAR PROCESS (DEY, 1993)

One of the most common approaches to analysing qualitative data is through content analysis. Essentially, this involves the making of inferences about data (usually text) by systematically and objectively identifying special character- istics (classes or categories) within them. The attempt to achieve a measure of objectivity in this process is addressed by the creation of specific rules called *crite- ria of selection* which have to be established before the data can be analysed. In con- trast to this, through grounded theory (see next section) no a priori criteria are assumed, these emerging through the process of data collection and analysis itself. Hence, at the risk of over-simplification, grounded theory is more inductive in character, and content analysis more deductive.

In using content analysis, there are three procedures for identifying classes and categories. First, *common classes*, comprising categories in everyday thinking such as age, gender, boss, worker are identified These common classes can be use- ful in linking or finding associations between the data and important demo- graphic characteristics. Secondly, *special classes* are identified, comprising the kind of labels particular groups or communities use to distinguish amongst things, per- sons or events. This can include specialist types of language (including slang, the use of acronyms, specialist professional terms, etc.). Thirdly, *theoretical classes*, or those classes that arise in the process of analysing the data, providing the key link- ages and patterns. As Flick (1998) points out, however, these categories are them- selves often derived from theoretical models. So categories are brought to the empirical data, and not necessarily derived from them. Of course, they will be repeatedly evaluated against the data and modified if necessary.

Having identified categories within the text, the next step is the analysis itself.The key here is to *reduce* the volume of textual material. Using the work of Mayring (1983), Flick (1998) distinguishes three steps in the analysis process:

* *Summarizing content analysis*, where the material is paraphrased with similar paraphrases bundled together and less relevant passages eliminated.
* *Explicating content analysis*, which clarifies ambiguous or contradictory passages by introducing context material in the analysis.This could include dictionary

definitions of terms, statements from the text or outside the text (for example, contextual information, theoretical propositions) that illustrate the passages being analysed.Through this process a clarifying paraphrase is formulated and tested.

* *Structuring content analysis* seeks to identify types of formal structures in the

materials. Hence, the analysis might extricate key features in the material and describe them in more detail. Alternatively, the material might be rated according to dimensions on a scale. So, in a passage dealing with, say, ‘motiva- tion’, the concept could be given a rating scale from ‘Highly motivated’ to ‘Completely demotivated’.The passage is then searched for examples of moti- vational feelings against the scale, resulting in a frequency count for each of the motivational levels.

Berg (1995) argues that content analysis can also be used with hypothesis testing, that is, a more experimental or quasi-experimental design. With hypothesis test- ing, he suggests going through the following stages:

* Make a rough hypothesis based upon observations from the data.
* Search the data to find cases that do not fit with the hypothesis.
* If negative cases are found, discard or reformulate the hypothesis to account for the negative cases.

Hence, it is necessary to develop research questions in advance that are linked to previous research (Mayring, 1983 in Flick, 1998). It is because of this insistence on measurement and hypothesis testing that Locke (2001) places content analysis within the modernist, objectivist paradigm.

Content analysis is potentially a very important weapon in the researcher’s armoury because it can be highly cost-effective.There may be no need to design and issue costly questionnaires – existing documentation such as company reports, memoranda or e-mails may provide the basis for the data.This, however, could also be construed as a disadvantage since the approach has to rely on ‘old’ data, rather than gathering fresh information. Another weakness, is that it is inca- pable of exploring associations and causal relationships between variables.As Flick (1998) also point out, the very conceptual structures that content analysis imposes on the data may obscure some of the interpretations that may have emerged inductively from within it.

**ANALYSING DATA: GROUNDED THEORY**

One of the most influential qualitative approaches is that of grounded theory, defined as a theory that is: ‘discovered, developed and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon’ (Strauss and Corbin, 1998: 23). Locke (2001) suggests that locating grounded theory in a particular research paradigm is difficult, because it has been used in both modernist (objectivist) and interpretivist approaches.There is, however,

a clear influence of symbolic interactionism, and this interpretivist paradigm’s commitment to studying the social world and the rejection of a priori theorizing. Grounded theory methods have been extensively used in education, evalu-

ation research, nursing and organizational studies (Charmaz, 1995). Unlike the deductive approach, grounded theory does not begin with prior assumptions about hypotheses, research questions or what literature should underpin the study. This is not to say that grounded theorists embark on a study with no theoretical position. They will have a competent level of knowledge about the area. But, as Strauss and Corbin (1998) warn, grounded researchers should not be so steeped in the literature that their creative efforts become impeded or constrained. The research should commence with a defined purpose, but also with the realization that this purpose may become modified or even radically altered during the research process itself. Through data analysis new theoretical positions or under- standings may emerge.

The grounded theory researcher works with his or her participants to actively construct the data, to get beyond static analysis to multiple layers of meaning. According to Charmaz (1995), these layers could include the participant’s:

* Stated explanations of her or his actions.
* Unstated assumptions about these actions.
* Intentions and motivation for engaging in the actions.
* The effects of the actions on others.
* The consequences of these actions for interpersonal relations and for further individual actions.

What about the data analysis process itself? Strauss and Corbin (1998) lay down a structured process and one that has become a highly influential way of analysing data comprising:

* *Open coding*: the disaggregation of the data into units.
* *Axial coding*: recognizing relationships between categories.
* *Selective coding*: the integration of categories to produce a theory.

These are pulled together into a framework that is called a *conditional matrix*, a ‘complex web of interrelated conditions, action/interaction, and consequences pertaining to a particular phenomenon’ (Strauss and Corbin, 1998: 181). These coding processes, however, are not necessarily completely distinct, and do not need to take place in sequence. In a single coding session, the researcher might move quickly from one coding method to another, particularly from open to axial coding. Another point to stress is that data collection and analysis should be an interwoven process with analysis, prompting the sampling of new data. Charmaz (1995) provides advice on the timing of the analysis, also suggesting that the data should be studied as they emerge, making it easier to identify respondents’ implicit meanings and taken-for-granted assumptions. Hence, for the novice grounded researcher, it is best to transcribe your own tapes as this gets you into contact with the data at an early stage.

**TABLE 13.3** OPEN CODING: DEFINITION OF TERMS

**Term Definition**

Concept Conceptual labels placed on discrete happenings, events and other instances of phenomena

Category A classification of concepts

Coding The process of analysing data

Code notes The products of coding

Open coding The process of breaking down, examining, comparing, conceptualizing and categorizing data

Properties Attributes or characteristics pertaining to a category Dimensions Location of properties along a continuum

Dimensionalization The process of breaking a property down into its dimensions

*Source*: Adapted from Strauss and Corbin, 1998

Before we begin to look at these coding categories in detail, a word of warning.As Dey (1999) discusses, not all advocates of grounded theory agree with Strauss and Corbin’s approach. Glaser (1992), for example, accuses their later work of abandoning their earlier, influential, ideas, suggesting that it has evolved into a quite different methodology (the coding paradigm, dealt with next). For Glaser, this smacks too much of rules and structure being imposed upon the data. However, despite these criticisms, the Strauss and Corbin approach is widely used and recognized as a valuable methodology. Given that the methodological advice coming from the grounded theory literature can be ‘bewilderingly complex’ (Partington, 2002: 138), an attempt is made here to supplement procedural descriptions with illustrative graphics. It must be stressed that this is just one inter- pretation of how grounded theory can be applied in practice.

***Open coding***

Open coding is defined as ‘the naming and categorizing of phenomena through close examination of the data’ (Strauss and Corbin, 1998: 62).Two analytical pro- cedures are involved in the open coding process: the *making of comparisons* and the *asking of questions*, both of which help towards the labelling of phenomena in terms of concepts or categories (see Table 13.3).

According to Strauss (1987), there are four essential guidelines to follow in the data analysis process:

* Ask the data a specific and consistent set of questions, keeping in mind the original objectives of the research study. The intention here is to uncover whether the data fit with these objectives. There may be occasions when new or unanticipated results emerge from the data, an outcome that is entirely valid.
* Analyse the data minutely, but also include as many categories, examples and incidents as possible.
* Frequently interrupt the coding to write a theoretical account. As the data are being coded, ideas or theoretical perspectives may arise. It is essential that these are noted immediately otherwise they may well be forgotten.
* Do not assume the analytical relevance of any traditional variable such as age, gender, social class, etc. until its relevance emerges from the data. This is par- ticularly so if the impact of an expected variable does not emerge – this result must be accepted.

Open coding works through a process of making *constant comparisons*. Each time an instance of a category is found, it is compared with previous instances. If the new instance does not fit the original definition, then either the definition must be modified, or a new category created.

Case Study 13.1 provides a practical example of how the process of asking questions and making comparisons can lead to the generation of concepts and categories.

**Case Study 13.1 Developing grounded theory – open coding**

A researcher is asked to observe customer behaviour in a large department store. She positions herself in an unobtrusive way, where she can see customers entering and leaving the store, walking down the aisles, looking at merchandise and buying goods, etc. Although the store is very busy and the activity at first appears chaotic, some tentative patterns begin to emerge which she begins to label. Some customers, for example, seem content with examining goods (picking them up, look- ing at them, putting them down) but then just moving on. She asks herself: why are they doing this? This behaviour she labels *exploring*. Other customers approach counter staff or supervisors walking around and ask them questions.This she labels *questioning*. Still other customers approach the busy tills and seem content to stand in line to be served. The label attached to this is simply *queuing*. Once at the till, they are, of course, *buying*. It is clear, however, that a minority of customers queue for a short time and grow impatient. They can be observed to put the merchan- dise down on a counter or shelf before leaving the store.This behaviour is labelled as *deserting*. One customer, however, is seen to be arguing with a supervisor. This behaviour is called *remonstrating*.

Later she notices that some customers not only pick up and look at goods they even rub them between their fingers and in some cases smell them! Hence under the category of exploring, she is able to identify three sub-categories: looking, feel- ing and smelling.

After the observation session our researcher begins the process of *categorizing* the data. In doing this, she is careful to choose categories that are more abstract in nature than the concepts they describe. Hence, she groups exploring and ques- tioning to form the category *information seeking* while queuing and buying are grouped together as *intentional purchasing*.

|  |  |
| --- | --- |
| **Activity 13.3** |  |
| Conduct a detailed observation of an event or phenomenon within a field set- ting. Analyse your data using open coding, providing your own set of descrip- tive labels. | |

Note that the labels given in Case Study 13.1 are original and specific to the researcher. This is important because if she had taken already existing and ‘borrowed’ categories, these can come with pre-existing meanings that can bias the research. Once categories are produced they still have to be developed so that they can be used in further data collection and analysis. Categories are developed in two ways: by their *properties* and by their *dimensions*. Using Case Study 13.1, we could take the category ‘information seeking’ and examine it for its properties and dimensions.Table 13.4 illustrates the results, showing that properties are the char- acteristics or attributes of a category. Dimensions represent the location of a prop- erty along a continuum. The development of properties and dimensions is crucially important because they are central in making relationships between cat- egories and sub-categories and later between major categories.They thus provide the basis of the analytical processes of grounded theory.

**TABLE 13.4** THE PROPERTIES AND DIMENSIONS OF THE CATEGORY ‘INFORMATION SEEKING’

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Property** |  | **Dimensional range** |
| Information-seeking | Questioning Looking Smelling Feeling | Often Up close  Repeatedly  Vigorously | Never  From a distance Once  Gently |

*Source*: Adapted from Strauss and Corbin, 1998

***Axial coding***

As we saw in the previous section, open coding disaggregates data so that cate- gories can be located.Axial coding then takes these categories and tries to make con- nections between categories and subcategories. Essentially, this means specifying:

* A *category* (phenomenon) in terms of the conditions that helped to give rise to it.
* The *context* in which it arises.
* The *actions* and *interactions* that stem from it.
* Its *consequences.*

We are also interested in what caused the phenomenon. Figure 13.5 pro- vides a highly simplified illustration of the relationships between a phenomenon

**CONTEXT**

Properties of phenomenon

Causal conditions

Specific dimensions of phenomenon

**Phenomenon**

**Action/interaction**

**Outcomes/ consequences**

**FIGURE 13.5** MAKING CONNECTIONS BETWEEN CATEGORIES AND

SUB-CATEGORIES BY EXAMINING A PHENOMENON IN TERMS OF ITS PROPERTIES, DIMENSIONS AND CAUSAL CONDITIONS

and its causes, context, actions and consequences. Note that Strauss and Corbin (1998), referring to the work of Dewey, caution that an initial condition rarely leads to an action/interaction and then a consequence in a direct manner.

*Rather, action/interaction may be taken in response to multiple conditions, some of which occurred in the past, some of which are happening in the present, and/or some of which are anticipated in the future.* (Strauss and Corbin, 1998: 184)

Hence, in Figure 13.5, causal conditions may occur in a variety of different tem- poral states.

To illustrate the process of linking sub-categories to categories, let us take the example of our retail store in the previous Case Study.We have seen a customer remonstrating (phenomenon) with a supervisor.We observe that the reason (causal condition) for this is the fact that the queues for the tills were very long and that she could not get served. But the description of this phenomenon,‘remonstration’, does little to fully describe the event. We need more detail. So we are also inter- ested in the specific dimensions of the phenomenon, and discover that this was an angry remonstration (in terms of volume/language) that lasted 10 minutes (time) in the middle of the store (location). But we also need to know something about the properties of the causal condition (the queuing) and discover that the customer queued for 8 minutes at a till that was shut seconds before she was about to be served. Next, we take a look at the context in which the phenomenon occurred, examining issues such as when, how and the type of cause.We discover that some

**CONTEXT**

Properties of

phenomenon

*Intervening conditions*

**Phenomenon**

Causal *Intervening*

conditions

*conditions*

**Action/interaction**

*Intervening conditions*

Specific dimensions of phenomenon

**Outcomes/ consequences**

**FIGURE 13.6** MAKING CONNECTIONS BETWEEN CATEGORIES AND

SUB-CATEGORIES: THE IMPACT OF INTERVENING CONDITIONS

tills are not operational due to staff shortages and that the till closure happened suddenly because the member of staff was due her lunchbreak.

Yet, there are also *intervening conditions*, or what could be called a ‘broader structural context’ (Strauss and Corbin, 1998: 103), which act either to constrain or facilitate the actions being taken. For example, again using our illustration, we find that during the angry remonstration, the store manager happens to be pass- ing and intervenes to help. She uses her cellphone to call for more staff and opens a till herself and serves the irate customer. But in general terms, intervening con- ditions within a context can include a wide range of conditions, including the influence of culture, time, economic status, hierarchical position in an organiza- tion, technological status, individual biography, etc. For example, the remonstra- tion is a long one, not just because of the scale of the inconvenience, but because only the previous week the company that owns the store had announced record profits so the customer may be reasoning ‘Why haven’t they employed more staff?’

We can see from the above analysis that grounded theory is an action/inter- action method of theory building which is concerned with the ways in which people manage and respond to phenomena, existing within a specific context or conditions. Recalling the discussion of symbolic interactionism in Chapter 2, people assign meaning to phenomena and then act upon these interpretations, these actions bringing forth fresh interpretations and actions amongst participants. But this action and interaction also has *consequences* that may be predictable or unanticipated. Indeed, the failure to take action also has its consequences. Yet, while axial coding can help us to identify relationships between categories, we still

**TABLE 13.5** SELECTIVE CODING: DEFINITION OF TERMS

**Term Definition**

Story A descriptive narrative about the central phenomenon of the study Story line The conceptualization of the story around the core category

Selective coding The process of selecting the core category, systematically relating it to other categories, and validating these relationships

Core category The central phenomenon around which all the other categories are integrated

*Source:* Adapted from Strauss and Corbin, 1998

need to see how these categories or classes can be integrated to build theories. This is achieved through selective coding.

***Selective coding***

This is the process of selecting *core categories* from the data in order to form the grounded theory. In terms of processes, this is not too different to axial coding, the main difference being that it is completed at a much higher level of abstrac- tion.Through axial coding you will have derived a set of phenomena or categories that have been defined in terms of their properties, dimensions, etc. Through selective coding, core categories are sought through which a ‘story’ can be told. The selective coding process involves a number of stages that illuminate the social processes going on unconsciously among a group of people comprising:

* Finding a story line formulated around core categories.
* Relating sub-categories to the core categories.
* Validating these relationships against the data.
* Filling in categories that need further refinement.

Table 13.5 provides a brief summary of some of these terms, after which we will discuss them in more detail.

One of the key features of grounded theory is *theoretical sampling,* which helps to make the emerging theory more generalizable.This is achieved by seek- ing to minimize and maximize the selected differences and similarities between core categories and the relationships between them across cases. Hence, finding strong similarities across cases (and minimum differences) helps to build confi- dence in the validity of the emerging theory. Attempting to find cases that con- tradict the theory may help to locate unexpected data and perhaps the emergence of new perspectives.

**Identifying the story**

The best way to start is to describe in a few short sentences the essence of the story to produce a general, descriptive overview. What are the most salient

features? What are the main problems being scrutinized? It might be useful to return to the axial coding stage and find an abstract category that in some way summarizes the story. If such a category does not exist, then one will have to be formulated that encapsulates the categories in the study. If more than one cate- gory exists, it is necessary to make a choice between them so that only one core category is used. Taking our example of the observation in the retail store, the main story here could be construed as *intentional shopping behaviour*.Whether cus- tomers are asking questions, examining goods, leaving the store impatiently or patiently queuing, they behave, or attempt to behave, intentionally – that is, with a specific aim.

**Relating sub-categories to the core categories**

This involves relating subsidiary categories around the core category by means of the paradigm so that they fit and provide an analytical version of the story. This may mean writing or re-writing the story and rearranging categories until they achieve a better fit with the story. Within these conceptual categories there will be relationships and networks of patterns. Strauss and Corbin (1994) stress how important it is to identify these patterns because it is these that give the theory specificity. Hence, it becomes possible to say that under one set of conditions *this* happens, whereas under another set of conditions *that* happens. Case Study 13.2 takes our retailing research a little further.

**Case Study 13.2 Developing grounded theory – selective coding**

Although the store is crowded and presents the appearance of chaos, in fact, thanks to the highly intentional behaviour of most customers, there are distinctive patterns of behaviour that become predictable. People do not simply rush into the store, grab the first item they see and then run out with it! They look around (touring) the isles, sometimes leaving this department, but returning later. Our researcher notices that those who examine merchandise closely tend to be with someone else rather than being alone – hence, exploratory behaviour is usually collaborative. Opinions are being shared (the ‘second opinion’). People queue, because the alter- native, pushing and shoving one’s way to the counter, will lead to even more stress. Queuing is a time-consuming activity that is undertaken to *save* time. Customers who approach store staff for information are also attempting to save themselves time by gaining quicker access to information.

|  |  |
| --- | --- |
| **Activity 13.4** |  |
| Returning to your data in Activity 13.3, take your open coding categories through the axial coding process, making connections between categories. Then, using selective coding, identify core categories and formulate a story line. | |

**Validating these relationships against the data**

Having found a story and related various categories to it, the relationships uncov- ered can be validated (grounding the theory) by returning to the data and asking whether the story fits for all those observed in the study.We may find, for exam- ple, that a minority of customers do not appear to behave intentionally at all.We noted in Case Study 13.2 that some customers spent some time queuing before losing patience and leaving the store. If their intention was to buy goods, they failed. Yet their behaviour may perhaps still be construed as intentional because leaving the store in this way has saved them time from queuing.They valued their time more highly than the satisfaction to be gained from the purchased com- modities. However, for instances that cannot be analysed as intentional, we need to fill in more detail. The researcher needs to trace back to the data to uncover the conditions that might be causing this variation.

**Filling in categories that need further refinement**

This is necessary to give ‘conceptual density’ to the theory as well as developing more conceptual specificity. This filling in phase may continue even up to the process of writing up the project, since report writing itself may reveal gaps and inconsistencies that require attention. If this occurs, the researcher may have to return to the field to collect more data (for example, by interviewing some of the shoppers).This illustrates that the task of data collection and analysis is not neces- sarily sequential but can be an iterative process.

The grounded theory approach just described should be a dynamic one when *process* is built into the analysis. Process means showing the evolving nature of events by noting why and how action/interaction (in the form of events, doings, or happenings) will change, stay the same, or regress (Strauss and Corbin, 1998). In other words, it is a case of not only noticing changes in phenomena but also of explaining *why* they occur. As Strauss and Corbin (1998) concede, how- ever, explanations may not always be obvious, even after additional data have been collected. They suggest, therefore, that a more deductive approach is adopted, in terms of a hypothesis, after which the researcher should return to the data to see if this hypothesis can be supported, modified or rejected.

But how and where do changes occur? There are three potential sources:

* Changes can occur in the causal conditions that led to the phenomenon.
* There may be a change in the intervening conditions.
* The outcomes or consequences of the action/interaction may in turn feed back into new causal conditions (see Figure 13.7).

***Theoretical sensitivity***

Strauss and Corbin (1998) argue that theoretical sensitivity, keeping an awareness of the subtleties of meaning in data, is an important element of grounded theory. Accordingly, they argue that theoretical sensitivity implies:

**CONTEXT**

Properties of

phenomenon

*Intervening conditions*

**Phenomenon**

Causal *Intervening*

conditions

*conditions*

**Action/interaction**

*Intervening conditions*

Specific dimensions of phenomenon

**Outcomes/ consequences**

**FIGURE 13.7** THE IMPACT OF OUTCOMES AND CONSEQUENCES ON THE ORIGINAL CAUSAL CONDITIONS

*the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn’t.* (Strauss and Corbin, 1998: 42)

Glaser (1992) links this sensitivity more overtly with theory building, arguing that it is the ability to generate concepts from the data and to relate them, according to normal models of theory.This sensitivity stems from a number of sources.

* The literature, which helps highlight issues and what might be important and unimportant.
* The professional experience of the researcher, showing what is important in the field of research chosen, and how things work, allowing events to be more clearly understood and interpreted.
* Personal experience, including experience in research, which can facilitate the making of comparisons.
* The analytical process itself, which can provide insights into the meaning of the data.

Theoretical sensitivity is a way of ensuring that the creativity involved in qualitative research is harnessed in such a way that the interests of science are not impeded.The process of scientific inquiry is further facilitated if the researcher is willing to ‘step back from the data’ and ask basic questions such as: do the data really fit the hypothesis? This is part of the process of maintaining a healthy scep- ticism and realizing that all elements of a study – hypotheses, concepts, questions,

theories, etc. – are provisional. Strauss and Corbin (1998) advise that a sound approach is to alternate between collecting and analysing data. Through this approach, analysis can allow for further questions to emerge, for sample selection and data collection, and the verification of hypotheses as they are being developed.

***Concluding grounded research***

As we have seen, grounded theory research can involve a fairly continuous itera- tion between data collection and analysis and between the different levels of cod- ing. So, when is the research completed? When is it time to stop? Glaser and Strauss (1967) suggest that this is when the level of ‘theoretical saturation’ is reached. By this they mean the non-emergence of new properties, classes, categories or rela- tionships from the data. Knowing when this point is reached, of course, is a matter of experience and judgement. This decision is helped if the research has moved towards the clear identification of core categories (around which the main story line is woven) and peripheral categories of less central significance. Hence, once the analysis has been integrated around the core categories and an adequate theory has emerged, the research could be said to be complete. Note that Bryman (1988) cautions that grounded theory may be effective in the generation of concepts, but he questions whether it actually produces theory itself.

Before finishing this section, it might be useful to look at grounded theory

in relation to other research approaches. Locke (2001), for example, suggests that grounded theory has much in common with:

* Ethnography, in that data collection and theory building are woven together as the researcher progresses (although grounded theorists are less interested in the cultural aspects of contexts).
* Case studies, in that grounded theory may be incorporated into a case study as a means of handling and interpreting data.
* Action research (see Chapter 15), in that both seek to develop theoretical ele- ments that are useful to practitioners within the research setting (although grounded theorists are less concerned with organizational transformation).

**APPROACHES TO ANALYSING DATA**

In a sense, having discussed two of the main analytical approaches, content analy- sis and grounded theory, we are left with the category of ‘other’ in which there are a considerable number of competing approaches. Three of the most signifi- cant, the use of narratives, conversational analysis and discourse analysis, are dis- cussed, briefly, here.

***Narratives***

One of the criticisms of content analysis, and particularly of grounded theory approaches, is that they lead to the fragmentation and decontextualization of data

away from the social processes they are meant to represent. However, research that encourages the use of oral or life histories, or uses unstructured interviews, often elicits qualitative data in the form of narratives or stories that lead to more holistic data right from the start. Using narratives is an ideal way of capturing the lived experiences of participants and has been used extensively in settings such as research into medical illness, the study of traumatic events, in education, and studies in the life of organizations. Musson (1998), for example, shows how people’s nar- ratives can be used to explain the contradictions, confusions and complexities of working within a modern organization, and how this can illuminate how both individuals and their organization’s function.

While different approaches to the analysis of narratives have been put for- ward, all have a number of common characteristics. First, the text is viewed in the *Gestalt*, that is, within the context and social situation in which it is created. Next comes the formal analysis of the text, including making distinctions between text that constitute narrative passages, and other forms of text.Where researchers gen- erally differ is in their attitude to the status of the text itself.While some take the ‘truth’ of the narrative at face value, others see narratives as a special way of con- structing events, that is, they are ‘social constructions located within power struc- tures and social milieux’ (Punch, 1998: 223).

***Conversational analysis***

Conversational analysis is interested in the formal analysis of everyday conversa- tions (Flick, 1998). Primarily, this includes the analysis of natural texts (often the results of transcribed tape recordings) and seeks to specify the formal principles and mechanisms with which participants express themselves in social interactions, or what Hutchby and Wooffitt (1998) term *talk-in-interaction*. Research in conver- sational analysis was originally limited to the study of everyday conversations such as telephone calls or family conversations, but has been extended to institutional- based conversations such as courtrooms, meetings and various kinds of interviews. Conversational analysis is less concerned with the formal analysis of language *per se*, than with elements of social interaction such as ‘turn taking’ or ‘opening up closings’, interruptions and the distribution of speaking rights, often in relation to various aspects of an institution’s functions (Have, 1999). Hence, conversational analysis is very much focused on the issue of context. Meaning or order in conversation can only be understood within the context of local prac- tices and are embedded within concrete contexts. Through turn by turn analysis and the description of conversations, the researcher is able to sense how social

order among participants is accomplished (Samra-Fredericks, 1998).

***Discourse analysis***

The focus of discourse analysis is on how both spoken and written language is used in social contexts. Attention is given to the structure and organization of

language with an emphasis on how participants’ versions of events are constructed. In contrast to content analysis, discourse analysis rejects the view that language is a transparent medium which merely reflects ‘reality’.Analysis becomes focused on recognizing the regularities in language in terms of patterns and repertoires.These repertoires (constructs) do not emanate from the individual as such, but are embedded in culturally and socially constructed situations.

**QUALITY IN QUALITATIVE ANALYSIS**

In discussing the issue of quality in qualitative research, some commentators resist the temptation to even address such matters as validity and reliability, because, they argue, these concepts were originally developed in a quantitative tradition (Bryman, 1988). Lincoln (1985) also asserts that naturalistic researchers, for exam- ple, tend anyway to be more modest and reluctant about making generalizations from their findings. Issues of external validity, then, are not high on their agendas. However, as we shall see, even some of the most enthusiastic adherents of the qualitative approach see the need to address validity and reliability as inescapable, although some do suggest additional quality criteria, some of which they see as of more importance.

***Validity***

The issue of validity revolves around the question of how far the constructions of the researcher are grounded in the constructions of those being researched (Flick, 1998). Hall and Callery (2001) criticize grounded theory in particular for assum- ing that the data collected reflect reality, and are independent of, and not influ- ence by, the subjective interpretations of researchers. What is needed, they argue, is for researchers to adopt a *reflexive* stance, through which they critically reflect on their influence on the research process. Self-reflective criticality is strengthened through repetitive checks of the researcher’s interpretations (Whittemore et al., 2001). Of course, another approach is to involve those being researched in check- ing the data for accuracy and in the analysis for the faithfulness of interpretation.

Data can be fabricated, discounted or misinterpreted. One way of avoiding such problems is where research can be validated through replication, but as Dey (1993) cautions, qualitative research is notoriously difficult to replicate. In place of external validation, ‘internal’ replication may be adopted, whereby other researchers can inspect the procedures through which the research has been con- ducted. This is much easier, of course, where two researchers collaborate on the same project.Another approach might be to split the data and analyse them in two stages to see if the results are similar.

Establishing principles for validity is all very well, but how do researchers achieve them in practice? Whittemore et al. (2001) present a useful checklist (see Table 13.6) but warn that selection depends upon contextual factors and the purpose of the research.

**TABLE 13.6** TECHNIQUES FOR DEMONSTRATING VALIDITY

**Type of technique Technique**

Design considerations Developing a self-conscious research design

Sampling decisions (i.e. sampling adequacy) Employing triangulation

Giving voice

Data generating Demonstrating prolonged engagement

Demonstrating persistent observation Providing verbatim transcriptions Demonstrating saturation

Analytic Member checking Expert checking

Testing hypotheses in data analysis Exploring rival explanations Performing a literature review Analysing negative cases

Memoing

Presentation Providing an audit trail

Providing evidence that supports interpretations Acknowledging the researcher perspective Providing thick descriptions

*Source*: Adapted from Whittemore et al., *2001*

|  |  |
| --- | --- |
| **Activity 13.5** |  |
| Examine the list in Table 13.6. Which of them would you find useful to imple- ment to aid the validity of your own qualitative research? | |

Another important feature here is that of external validity, that is, generalizing from the data to other cases or situations. Generalizations can be defined as asser- tions of enduring value that are context-free (Lincoln and Gubba, 1985: 110). Since sampling in qualitative research tends to be purposive rather than random, and data gathered from a limited number of cases (sometimes one), can we gen- eralize? Lincoln and Gubba (1985) distinguish between two kinds of generaliza- tion. The first is nomothetic, based upon a rationalistic, law-like stance, as in the positivist paradigm. The second they term ‘naturalistic generalization’, which is a more intuitive, ideographic but none the less, empirical approach based upon personal, direct experience.The authors then dismiss the notion of nomothetic generaliza- tions that are truly universal to all times and situations. Local conditions, they con- tend, make it impossible to generalize. ‘If there is a “true” generalization, it is that there can be no generalization’ (Lincoln and Guba, 1985: 124).

At best, the results from individual cases allow us to build working hypothe-

ses that can be tested in subsequent cases. As Miles and Huberman (1994) point out, through the use of multiple case studies, attempts are made to match on the basis of underlying theories. As more similar or contrasting cases are used, we can

justify, through *replication*, the stability of the findings. Even then, as Dey (1993) asserts, as a basis for generalization, qualitative analysis is more likely to be sug- gestive than conclusive. At best, rather than generalize, we can see if the findings from Context A can be transferred to Context B.

***Reliability***

Reliability refers to the stability of findings. A reliable observation, for example, is one that could have been made by any similarly situated observer (Denzin, 1978). For most qualitative approaches, reliability is improved, if not guaranteed, by triangulation, gathering information, for example, from multiple sources or by using multiple data gathering tools. Denzin (1989) offers four kinds of triangulation:

* Data triangulation, where data are gathered using multiple sampling strategies. This can include: *time triangulation*, when data are collected on the same phe- nomenon over a period of time; *space triangulation*, when data are collected from multiple sites; *person triangulation*, where data are collected at three levels in an organization – for example, individuals, groups and departments.
* Investigator triangulation, using more than one observer in field situations so that observer bias can be reduced (and inter-judge reliability improved).Thus, a training programme would teach observers to keep an ‘open mind’ and not to become obsessed with their hypothesis (if they start with one).They should not jump towards ‘solutions’ to a problem as this will tend to make them ignore facts that do not confirm their expectations. In making a study, they are trained to notice *all* aspects of a situation and to deliberately search for unex- pected facts, and to seek alternative interpretations. The data will then be checked by other trained colleagues (and even informants) who will, if possi- ble, repeat the observation to see if they get the same results.
* Multiple triangulation, in which a combination of multiple methods, data types, observers and theories are combined in the same investigation.While it is often a practical difficulty to achieve a combination of all of these, it is more common to at least use multiple data levels and methods.
* Methodological triangulation, of which there are two kinds: *within-method,* where the researcher employs varieties of data gathering techniques within the same method, and *between method*, where a variety of different methods are used – for example, quantitative data from a survey with qualitative data from observations.

It should be noted, however, that the significance of reliability is not universally accepted. Glaser (1992), for example, asserts that verification has no place in grounded theory, the task of which is to generate hypotheses, not to test them. This is in sharp contrast to the views of Strauss and Corbin (1994), who suggest that within the data collection and analysis process there is an in-built mandate to strive towards the verification of any resulting hypotheses. For interview data, reli- ability can be increased through the training of interviewers and through the use

of standardized interview schedules. For observations, researchers also need to be trained before they enter the field.

One element of qualitative analysis, conversational analysis, brings with it some different reliability issues. Since conversational analysis is often based on tapes and transcripts of conversations, in terms of reliability, it is fairly obvious that taped conversations will tend to present more reliable evidence than hastily writ- ten field notes. But as Peräkylä (1997) warns, video- or audio-recording of events may lose some important aspects of social interaction. These reliability problems include:

* Time. A single recording of events taking place in an organization may be either unenlightening or completely misleading if those events do not repre- sent what typically happens most of the time. Hence, reliability will be improved with a more longitudinal research design, with multiple visits and recordings.
* ‘Ambulatory events’, that is, the movements of people that simply do not show up on video or audio recordings. One solution is the setting up of multiple cameras to catch these movements.
* Documentary realities. Some conversations (for example, professional people such as doctors or lawyers talking to their clients) may be influenced by the documents (such as forms) they are discussing. Researchers must have access to these documents and include them in the analysis process.

***Trustworthiness***

Some researchers, particularly those from the naturalistic tradition, argue that trustworthiness is more important than concerns over the validity or reliability that have just been outlined. Skrtic (1985), for example, suggests that this is addressed through a focus on:

* *Transferability* with purposive sampling to illustrate pertinent issues and factors when comparing two contexts for similarity; and thick descriptions to provide evidence for making judgements about similarities between cases.
* *Dependability* through the use of audit trails through the data.
* *Confirmability*, with the audit showing the connections between data and the researcher’s interpretations.
* *Credibility*, the use of persistent observations; triangulation (of data, methods, theories and investigations); member checks (where data and interpretations are tested with research participants).

Lincoln and Gubba (1985) argue that credibility can be strengthened through the researcher making a conscious effort to establish confidence in the accuracy of interpretation, and the fit between description and explanation.

To these we can add *authenticity*, which relates analysis and interpretation to the meanings and experiences that are lived and perceived by the subjects of the

research. This means the research being aware of the multiple voices contained within the data, and the subtle, sometimes conflicting realities within it. Do the interpretations ring true? Have rival explanations been considered? Davies and Dodd (2002) also suggest that just as important are practices that are honest, open, empathetic, sensitive, respectful and engaging. Perhaps these concepts should also be seen as essential ingredients of research quality.

However, as Johnson and Harris (2002) comment, one problem with qual- itative research is that a standard practice for achieving validity, reliability or any other quality indicator has yet to be established. This is because of the variable nature of qualitative research and the relative novelty of many research studies.

|  |  |
| --- | --- |
| **Activity 13.6** |  |
| Evaluate the wide range of software packages for qualitative analysis at the following websites:  <http://caqdas.soc.surrey.ac.uk/index.htm> <http://www.scolari.co.uk/> | |

**SUMMARY**

* + Qualitative data can have a quality of ‘undeniability’ because they are rooted in the natural context of field settings.
  + The main focus of qualitative research is to understand the ways in which people act and the accounts that people give for these actions.
  + In all but the most inductive qualitative approaches, research questions are written, but *when* they are written is one of the features that distinguishes qualitative from quantitative research. In qualitative research, questions are not always written at the start of the study.
  + Data are collected using a wide variety of methods, including field research (the most com- mon) but also the use of unobtrusive data, photographs, film, video and other sources.
  + The main approaches to qualitative data analysis comprise content analysis and grounded theory. Content analysis involves locating classes or categories within the data. These categories are usually derived from theoretical models. In contrast, grounded theory uses a process of open, axial and selective coding to develop cat- egories and theories inductively from the data.
  + Due to the lack of non-probability sampling methods, qualitative analysis is open to

accusations of invalidity. However, claims for the validity of results can be strength- ened, for example, by eliciting the views of research participants.

* + The reliability of qualitative research can be strengthened by using multiple cases,

or by supporting assertions using numerous examples, or by verifying the analysis using other researchers. Concepts such as credibility, authenticity, honesty and openness are also important in qualitative research.

*(Continued)*

**SUMMARY OF WEB LINKS**

<http://caqdas.soc.surrey.ac.uk/index.htm> <http://www.scolari.co.uk/>

**Further reading**

Miles, M.B. and Huberman, A.M. (1994) *Qualitative Data Analysis*, 2nd edn. Thousand Oaks, CA: Sage. Still an outstanding source of many and varied qualitative analysis methods.

Flick, U. (1998) *An Introduction to Qualitative Research.* London: Sage. Deals with all the major theories and methods of qualitative research design, includ- ing some less well-known approaches such as the use of personal narratives.

Symon, G. and Cassell, C. (1998) (eds) *Qualitative Methods and Analysis in Organisational Research* London: Sage. Presents a refreshing array of quali- tative techniques that are dealt with only sparingly by many of the standard texts. Subjects include: life histories, critical incident techniques, qualitative research diaries and pictorial representation.

Locke, K. (2001) *Grounded Theory in Management Research.* London: Sage. Provides a detailed summary of the evolution of grounded theory, and illus- trates how it can be applied in a management and organizational context.

Fielding, N. and Lee, R.M. (1998) *Computer Analysis and Qualitative Research.* London: Sage. A valuable introduction to some of the principles of using computers in qualitative research as well as a practical guide to man- aging data and coding categories.

|  |  |
| --- | --- |
| **Suggested answers for Activity 13.2 (selected examples)** |  |
| There might tend to be more confidence in the validity of results from a com- prehensive sample since this covers every case in a given population. Similarly, intensity samples focus on cases that are typical of the population rather than outliers or atypical examples. Deviant case sampling, which looks at extreme cases, may be accused of producing invalid results, but may, in fact, yield illuminating and unexpected data that allow new avenues of explo- ration. Critical case sampling, with its focus on one case or site, can only pro- vide a strong case for validity if evidence is provided that the case is, indeed, typical of the trait, characteristic or phenomenon under investigation. | |

# 14

## Writing the Research Report

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Write a report that matches your original or evolving research objectives.**
* **Plan and resource the report writing process.**
* **Select from a number of different report formats.**
* **Present your findings in a style, format and structure that is accessible to your intended audience.**

You have planned your research project, adopted an appropriate research methodology, designed valid and reliable data gathering tools and collected and analysed the data. What could be easier than writing up the research report? Actually, it is not as easy as many would imagine. The most carefully planned and skilfully imple- mented research study will be doomed to failure if you are incapable of present- ing the findings in a manner that is engaging, coherent and accessible for your intended audience. As Murray (1994) warns, reports are too often written in a private language that excludes the very people who may have responsibility for actually implementing or assessing the research. One of the keys, therefore, is to keep it simple.

Timing is also important. Most people assume that reports are written at the end of a research project. This is not necessarily the case. Indeed, the more time you can devote to writing sections or chapters of the report during the research process itself, the better. This is because the process of writing is extremely valuable in clarifying your own thoughts, and in finding where gaps and inconsistencies may be emerging in the research. It is better to discover these problems well before the end of the research project so that they can be rectified. Another concern is that of objectivity. It is likely that you are tackling a research project because you have chosen to (you are interested in the subject), or have been asked to (perhaps it is seen by others as ‘your area’). Either way, even though at the start of the project you do not see yourself as an expert, it is probable

that you have some interest or connection with the topic. The key here, then, is adopting and maintaining an objective ‘distance’ from the subject and not getting dragged into some sort of polemical argument. Failure to maintain an objective stance will not only cloud and obscure your writing, it may alienate your audience.

Report writing is (or should be) a creative process. Even using the same sets of data, two researchers will not produce reports that are identical. But report writing is also a skill and, like any skill, it must be learned through practice. It must also be based upon sound principles. Presented in this chapter, then, are some basic approaches to producing a research report that will hopefully complement rather than hinder the research effort that has preceded it. Note that the term ‘report’ is used here to mean actual reports produced in an organizational context, but many of the principles discussed apply equally to academic dissertations, theses and articles written for the academic literature. These are also discussed with reference to their own specific requirements.

**THE REPORT WRITING PROCESS**

You will recall that in Chapter 4 and, indeed, throughout this book, the impor- tance of writing clear and unambiguous research objectives has been stressed. It would certainly be a pity if, at the final hour, these objectives were ignored and the report aimed at a completely different set of goals! Of course, it is possible that your objectives may have shifted or even radically changed during the research process itself. This is entirely acceptable, as long as you have clearly articulated what these new objectives are going to be. Even in the most heuristic research approach, the researcher sets off with an intended goal – even though this may become modified through the process of inquiry itself.

***Planning the report***

Some writers prefer to launch themselves immediately into the writing process, but it is usually prudent to start with at least a draft plan for the report, even if the plan may change during the writing itself.The plan can initially be sketched out on paper or typed straight into a word processed document.The plan might con- tain the main headings and sub-headings of the report, and references to where notes, files or data sets can be found for when the actual writing process starts. It is nearly always sensible to get this plan evaluated by a reviewer. This person might be your supervisor or tutor if you are undertaking an academic course of study, a peer or co-worker or even the report’s organizational sponsor. In seeking this review, make it clear that you want *critical* feedback. Eliciting the views of managers or sponsors is always useful because it enables you to gain some assur- ance that the report meets with their interests and needs.

In some cases, the planning of the report may be assisted by terms of reference

that describe the purposes of the report, its scope, type and readership. Sometimes these terms of reference may be given to you by whoever is commissioning you

to carry out the research. Wainwright (1990) suggests that if you have not been given any terms of reference, you should write your own.

**Knowing the purpose of the report**

Before starting, as Turk and Kirkman (1989) warn, you must begin with a clear idea of what it is you want to achieve. This is not the same as your subject. By focusing on the *aim* of your report, you are considering what it is that the readers want to know, so that it is relevant, interesting and usable for them. Failure to think clearly about the needs, interests and motivations of the target audience is one of the most common reasons why reports fail to fulfil their potential. It often helps to think what it is you expect readers to actually *do* after they have read the report. For example, do you expect them to:

* Request a presentation.
* File the report.
* Pass the report on to another individual or committee.
* Send an e-mail.
* Arrange a meeting.
* Sign a cheque.

|  |  |
| --- | --- |
| **Activity 14.1** |  |
| Examine each of the following words, and select one or more that describe the purpose of your report: describe, explain, instruct, specify, evaluate and recommend, provoke debate but not seem to lead, persuade, concede and apologize, protest, reject. | |

**Knowing your audience**

You also need to remember that the report may be read by a variety of people, each of whom has a different interest or motivation for reading it. If it is, say, a technical report, those with technical expertise in this field may be interested in issues of *how* and *why*. Senior managers in an organization, however, may have less time to read all the technical details, but want to get quickly to the issue of *what purpose, what is the cost*, and *where are the resources*? Writing for an academic audi- ence will require a style of writing that includes a strong engagement with the academic literature. So you will need to think of how the report can be written in a way that is accessible to a diverse audience, at least some of whom will not want to read it in its entirety.

Turk and Kirkman (1989) suggest that, before you start, you ask yourself each of the following questions:

* Are all the readers alike?
* What do they already know about the subject?
* What do they need to know?
* What are their attitudes to the subject, to the writer, and to the writer’s objectives?
* What are the psychological and physical contexts within which the report will be received?

Booth (1991) also suggests that the writer needs to decide whether the message to be delivered is going to be made explicit or implicit in the report. She argues that it is often better to make the argument implicit, and to lead the reader towards the appropriate conclusion.

|  |  |
| --- | --- |
| **Activity 14.2** |  |
| Taking a report that you intend to write, now add a description of your audi- ence using the bullet points above. | |

**Where to start?**

Even if it may seem logical to start writing with an Introduction, this is probably not the best place – indeed, it could be argued that it is easier to write this at the very end (when the whole ‘story’ of the project is clear). Most researchers find it easiest to begin with the literature review (if the report requires one). There are a number of reasons for this:

* The review will normally have been conducted at an early stage of the research and so can be attempted well before the final phases.
* The process of writing the literature review helps to articulate the objectives, focus and direction of the research.

The literature review, of course, can always be updated and improved at a later stage, but writing a first draft early in the research can provide a solid theoretical and directional underpinning to the entire project. Where you start is obviously up to you.The only point to emphasize is that you should get started on the writ- ing process as soon as possible!

***Making and using time***

In writing a report, time is one of the most precious, but probably least available, commodities you have at your disposal. It is important, then, to use it wisely and to make as much time available to writing the report as possible. Good project

management is the key. At the very start of the research process, you should have allocated a block of time (days, weeks or even months, depending on the scale of the project), for the report writing process.Within this elapsed time schedule, you should also have planned for the writing sessions you need in order to complete the report. If your research and data gathering efforts have overlapped into the report writing phase, then you need to evaluate whether you can complete the report in the planned time, or whether you need to negotiate an extension.What is vital here is that you take some control of decisions, and do not leave requests for extensions until the last minute.

As far as the report writing process is concerned, people tackle this in different ways. According to Saunders et al. (2000), most people can write about 2000 words in a day, but this will depend on their experience, confidence and the complexity of the subject. Some people prefer to devote large blocks of time to writing and to keep going into the night until exhaustion overwhelms them. Others prefer to allocate discrete blocks, spread across a time period. What is important, is that, whatever your preferred style, the time resource you allocate yourself is sufficient to get the job done.

Whatever time you have planned for yourself, you obviously want to make the best use of it. In doing this you might want to:

* Find a place to work where distractions are minimized and where you can think clearly.
* Write at a time of day when you are physically and mentally fresh. Take regular breaks.
* Have access to all the resources you are going to need (a computer for word processing, keeping notes, files, data, and for data analysis, etc.).
* Set yourself challenging but realistic goals for each writing session. This might be a word count – in which case, you could keep a record of your production achievements.

Of course, the report writing process is made more complicated if it is a team effort. The general principles, however, are the same. Plan for the writing of the report and allocate roles and responsibilities. Set deadlines and meet or communi- cate regularly to see if all team members are on track. Since the timing of the report is now dependent on the speed of the slowest member, it is often prudent to have contingency plans in case the process is held up. For example, can another member of the team or additional staff resources be drafted in to write some more sections or to provide assistance?

***Writing the report***

After ‘completing’ the report, always regard this as merely the first draft. Leave it for a few days (if this is possible) before you return to it, so that you will have forgotten the thoughts behind the report and will read what you actually said! You will, inevitably, find not only typing and grammatical mistakes, but also gaps, inconsistencies and

errors. It is essential at this stage that you are your own strongest critic. Put yourself into the mind of your audience.Would they understand your writing style? Does the report flow logically? Does it address the audience’s needs?

In revising the document, Turk and Kirkman (1989) suggest first reading the draft without stopping, but noting problem passages or words so that you can return to them later. This top-level overview allows you to evaluate the general flow of information and ideas and to see if the structure ‘hangs together’. Next, return to the specific problems you identified and amend them. In doing this, pay attention to issues of style.

**THE REPORT STYLE AND STRUCTURE**

The style and structure of the report will very much depend on what type of report you are producing and for whom.There are, essentially, two kinds of readers: those who commissioned or who are expecting the report, and those who are not expecting the report but who may, none the less, be interested in it. The com- missioning group will want to know if this is the report they were waiting for and whether it contains the information they need. The second group will want to know if the report has any relevance to them, and whether it contains any new information.Therefore, for both groups, you need to give the audience informa- tion quickly and in an accessible way. It must compete for their limited time and attention.The kinds of criteria readers might apply in deciding whether they read the report or not might include:

* The title – does this sound relevant or interesting to me?
* Do the contents of the report actually match the title?
* How long is the report – what is my investment of time going to be and is it worthwhile?
* How well presented is the report – how confident am I in the abilities of the writer?

The next sections present a number of alternative formats.

***Organizational and technical reports***

A business report is taken to mean any report written for the purposes of general management or organization, whereas a technical report has, obviously, a more specifically technical focus. Of course, organizational research can often involve the need to understand and act upon technical issues. Some business and techni- cal reports may be written for publication in an academic journal, and so will tend to follow the structure discussed later.Technical reports may be written for orga- nizational purposes and be commissioned or sponsored by an individual or committee within the organization.When undertaking reports of this kind, both you and the sponsor need to be clear about:

* + The objectives of the report.
  + Access to resources needed to complete it.
  + Timescales for delivery.
  + The extent to which the report is purely descriptive or analytical. If the latter, are recommendations required?
  + The importance, or otherwise, of theoretical underpinning. This, of course, is essential for academic journal articles but may be irrelevant for some kinds of technical report.
  + The final intended audience for the report (which may not actually be the ini- tial sponsor) and the style, tone and structure that the report should adopt.

In contrast to academic articles, business and technical reports tend to be much more utilitarian and ‘to the point’. White (1997) suggests the following typical structure, but this should not be adhered to rigidly – select sections according to your needs.

**Cover** A well-designed cover can help to attract a reader’s attention and give a positive impression about the report before it is even read. White (1997) recom- mends that a cover should include at least four elements: a descriptive title of the report; the names of the report’s principle authors, investigators and editors, if applicable; publication number, if the organization requires a record of this; the publication date.

**Title page** This is the first page of the report and repeats some of the cover con- tent. For example, it contains a descriptive title of the report, the author’s name and the organization’s name and address. This page can also include the name of the person who commissioned the report.

**Abstract/executive summary** This is designed for busy people who do not usually have the time to read a report in its entirety, and may be between 200 and 500 words long. This summary, then, has to be both comprehensive in its cover- age but also very succinct. It should present a short description of the project, plus findings and recommendations. Figures, illustrations and tables are not used.

**Table of contents** White (1997) recommends that a table of contents should be used for reports that are over 10 pages long.The table of contents shows all main headings and even sub-headings. Since all headings should fully describe each sec- tion, the table of contents not only provides a guide to finding sections, it can actually help to describe what a document is about. Most word processing appli- cation programmes will generate a table of contents automatically, but only if you have formatted your report by allocating a style (for example, Heading 1, Heading 2, etc.) to your headings.

**List of symbols, abbreviations, definitions** If your report contains complex terms, abbreviations or definitions, then it is helpful to provide an explanation at the beginning. Of course, you will still be required to explain each new term or

abbreviation in the main body of your text as it occurs. For example, you will write ‘Human Resource Management (HRM)’ before alluding to HRM in the remainder of the report.

**Introductory material** This might include any of the following:

* The nature of the problem being addressed.
* Why the research was undertaken.
* Any limitations on resources, materials or time in undertaking the research.
* The scope of the research (for example, did the study look at the problem from the perspective of individual employees, departments, sites or the entire organization?)
* An outline of previous work on this topic.

**Report of work done** This will probably be the longest section and will, obvi- ously, be determined by your subject, which might be:

* A new product or service. Readers may be interested in its potential uses, the risks involved, and its technical, financial and material requirements.They may also be interested in the life cycle of the product or service, its potential com- petitors and plans for its development.
* Technical or managerial problems. Readers may be interested in the origins and nature of the problem, whether it is temporary or permanent, options for solving the problem, and which option is selected and why. They may also want to know how and when the recommendations are going to be imple- mented, and what the outcomes are likely to be.

One of the weaknesses of many reports is that the main findings are buried in the middle or end of the document. Hence, busy managers will have to spend time delving for the nub of the argument. But this is not just an issue of time, it is also one of cognition and understanding. By presenting the important findings or arguments first, subsequent information can then be used to supplement and sup- port them. Readers find it easier to process and assimilate detailed information if they are first given a general framework to work with. This is not to argue that there may not be reports where the argument proceeds like a detective story with the ‘solution’ arriving at the end, but most readers of business reports will be both irritated and confused by this approach and will want you to get to the point! Herbert (1990) offers a helpful suggestion here: imagine that you have been asked to appear on a serious radio programme to explain your report.Think of how you would have to quickly and succinctly explain *what* you have been investigating, *how*, *why* and with *what results*.

Turk and Kirkman (1989), suggest that reports should be written using a

pyramid structure (see Figure 14.1). Since only the first few pages of the report will be read by most readers in an organization, this should contain an accurate summary of the main substance of the report (see Abstract/executive summary, above). The most detailed information, including appendices, will be included at the end of the document.

**Title and executive summary**

**Body of report**

**Most detailed information**

**Most readers**

**Few readers**

**FIGURE 14.1** PYRAMID OF EVIDENCE MODEL FOR REPORT DESIGN (ADAPTED FROM TURK AND KIRKMAN, 1989)

The main aim of the business report should be to put over the information needed, to those that require it, so that something can be done. It is not an exer- cise in writing down everything you have learned about the subject, no matter how interesting (to you) this may be. It is worth, however, just qualifying this last statement. It might be worthwhile noting problems encountered in undertaking the research, the false starts made and negative findings recorded, so that other researchers may learn from your experience. Managers who delve this far may also note some of the ‘side issues’ you were not able to pursue, so that further research might be commissioned. But, overall, try to maintain the focus of the report – keep to the point!

**Results/findings** This section should not be a ‘dumping ground’ for all your research data. Most of the data sets will probably be presented in the appendices. The results section should contain summaries of the data that focus on the main findings of the research. For clarity, it helps if data can be presented in the form of tables or graphs (recall Chapter 12). Note that the Results section should con- centrate precisely on this and not discuss the findings. The Discussion section comes next.

**Discussion and analysis** This section is where you have an opportunity to draw inferences from the results (what do the data mean?), look at relationships between sets of data and also differences. What was unexpected? What were the causes and what are the likely effects. What do the results mean in terms of options for action? It must be stressed that the Discussion is not an opportunity merely to repeat the results, although reference may need to be made to the find- ings in drawing out the threads of the analysis. Remember, the Results tell you what has happened, the Discussion/Analysis section aims to understand how and why it happened.

**Conclusions** A Conclusion could be merely a number of remarks that ‘round off ’ the report, or it could mean a ‘logical outcome’ of the report’s arguments.The latter is probably preferable in most cases. A conclusion should not be used to

repeat findings or facts – it should contain a series of statements that bring together, in a succinct format, what the study has discovered. Berry (1994) warns that Conclusions should not present new evidence, but should relate back to the original purpose and focus of the report.

**Recommendations** These should flow logically from the evidence presented by the report, so that there should be no sudden surprises for the reader. This section should also focus completely on these recommendations and not contain other material such as data or discussion that has already been presented. Recom- mendations are usually presented in a concise format, so the use of a list is entirely appropriate.White (1997) advises that a recommendations section is only relevant if the author has been commissioned to make such recommendations.

**Acknowledgements** Turk and Kirkman (1989) recommend limiting acknow- ledgements to those outside the organization that have provided you with help, and only if this assistance is beyond what one would normally expect from some- one in their position. This section should not be used to flatter those who are acknowledged, but to provide the reader with a sense of where some of the infor- mation originated.

**References** This will be used for citing all the books, journal articles, reports, websites and internal organizational documents used in the study. Only those sources that are actually referenced in the report should be cited, not all those that you read but did not necessarily use. If you want to refer to documents that you are not referencing but which readers might find useful, then place these in a Bibliography section.You might also want to indicate why these sources might be useful.

**Appendix for tables, figures and graphs** Some of these tables and figures will probably appear in the main body of the report. Ensure that they are not gratu- itous, that is, they should be there for a purpose. Also make sure that they are referred to and described in the body of the text (and not just dumped to stand on their own), and that they appear as close to this description as possible. The citation ‘Table’ should appear above the table to which it refers, while the cita- tion ‘Figure’ should appear below the figure (as in this book). This is the con- vention. More detailed data can be summarized in tables, figures and graphs in the appendix.

**Other appendices** These should include any research instruments you have used, such as questionnaires, interview or observation schedules, and any accom- panying documentation such as letters sent to survey participants.They might also include copies of e-mails or other communications generated during the process of the research (but remember not to breach confidentiality by revealing the names of research subjects without their permission). Whatever topic is covered in an appendix, it is important that there is a reference to the appendix and its purpose in the main body of the report.

***Academic theses and dissertations***

An academic thesis or dissertation is very different to an organizational or technical report in that it is usually more comprehensive and expansive. It seeks to marshal *all* the relevant information that relates to the topic or problem, and to support all data and arguments with sources of evidence, so that the way in which a case is built up can be judged (Halpenny, 1976). It also seeks to be original. According to Phillips and Pugh (1994), this could include:

* Carrying out empirical work that has not been done before.
* Using already known material but with a new interpretation.
* Replicating a study that has been done in another country or context.
* Bringing new evidence to bear on an old issue.

How a thesis or dissertation is structured will partly depend on the nature of the research itself, but it is sound advice to sketch out an intended outline at as early a stage as possible. Clearly, this tentative outline may change during the research or writing up process, but it does give the writer a sense of structure and direction (Teitelbaum, 1998).The usual convention for the layout is as follows:

* Title page (which should contain the title, the name of the author and quali- fications, a statement of the degree for which the document is being pre- sented, the names of the academic School or Department of the University or college and the date of submission).
* The Abstract (a summary – usually of not more than 300 words – of the con- tent of the thesis).
* Contents page (a listing, giving precise headings for each section and their page numbers).
* Acknowledgements (thanking people and organizations that have assisted in the work).
* The main body of the thesis. This could comprise an Introduction, several chapters dealing with a review of the literature and comprising theoretical issues and arguments (recall Chapter 3), research Methodology, plus Findings, Analysis and Conclusion and/or Recommendations.
* Appendices (if any).
* References (a complete listing of all works cited).

It could be argued that, in some ways, the first and last chapters are the most important as these are what readers tend to remember. The Introduction chapter (often just a few pages in length) will usually be written after the completion of the research and will often contain:

* A broad review, putting the work within a wider context.
* A coherent argument for the significance of the problem being considered.
* An outline of the thesis, showing how the problem was approached.

The final chapter may contain:

* A brief restatement of the problem, now seen from the perspective of what has been learned.
* A clear outline of what has been achieved.
* A discussion of the main recommendations for work in the future.

Between these chapters, of course, we have the all-important literature review.This provides a context for the proposed study and demonstrates why it is important and timely. In order to do this, it sets out to clarify the relationship between the study and previous research on the topic. A very common mistake is that this part of the dissertation reads like a ‘laundry list of previous studies’ (Rudestam and Newton, 1992: 46). Hence, every paragraph begins,‘Brown found that …’, or ‘Fletcher argues …’. Recall Figure 3.4 in Chapter 3 and the advice that you should gradually synthesize and focus your ideas, so that all material is linked to the central direction of the study. By the time the reader reaches the Methodo- logy section, he or she should be saying to themselves:‘Yes, these are the questions I too am asking myself and this is what the study should focus on so that knowl- edge in the field can move forward.’

***Academic journal articles***

You may undertake research with the specific intention of submitting the outcome for publication to an academic journal, or you may have written a thesis and want to see an edited version of it published. Berry (1994) warns that editors and pub- lishers loath theses. This is because they are written in a cumbersome academic style where length is relatively unrestricted. For a professional reading public, the material will have to be completely reworked, with a succinct and taut prose.

It is also not enough just to decide that you want to publish an article in a journal. The question is: which journal? All journals require contributors to adhere to a specific format.This is usually stated within the journal itself, and nor- mally gives guidance on the structure of articles, writing style, reference system, length and so on. Obviously, this is the first place to look if your report is being written for publication. But you will also find it useful to go beyond this formal outline and in particular to look at:

* The types of articles that have been recently published.What kinds of subjects are of interest to the readers of this journal? Are the research approaches mainly quantitative, qualitative or a mixture of the two, and what epistemo- logical traditions do they follow?
* The formality, or otherwise, of the academic style. In most journals, you should expect a very formal style to be adopted, using the past tense and in the passive voice (for example, ‘Fieldwork was undertaken using a structured observation schedule. It was then decided to ….’).
* The depth and content of the academic underpinning. Review the reference section of a number of articles. How lengthy is the typical reference section? Is any particular research paradigm favoured?

As Berry (1994) notes, it is usually better to have details of your selected journal’s format before writing the article rather than after it.The following Case Study provides an example of what to look out for.

**Case Study 14.1 Typical structure for an academic journal article (abridged)**

**Aims and scope**

*The International Journal of Human Resource Management* is the forum for HRM scholars and professionals world-wide. Concerned with the expanding role of strategic human resource management in a fast-changing global environment, the journal focuses on future trends, drawing on empirical research in the areas of strategic management, international business, organizational behaviour, personnel management and industrial relations.

The journal encourages strategically focused articles on a wide range of issues, including employee participation, human resource flow, reward systems and high commitment work systems. Features include:

* Comparative contributions from both developed and developing countries.
* International data sets.
* Special issues based on conferences and current issues.
* Reviews.

*Notes for contributors:* Submission of a paper will be taken to imply that it presents original, unpublished work not under consideration for publication elsewhere. Articles should normally be between 7,000 and 8,000 words in length. The Harvard system of referencing should be used. For any other matters of presenta- tion not covered by the above notes, please refer to the usual custom and practice as indicated by the last few issues of the journal.

*Source:* Adapted and abridged from *The International Journal of Human Resource Management* (2001)

|  |  |
| --- | --- |
| **Activity 14.3** |  |
| Locate at least two academic journals that cover issues within the subject field of your report or thesis. Looking at both the ‘Notes for Contributors’ and the kinds of arti- cles published, are there any significant differences between the journals in terms of:   * Subject areas. * Emphasis on approaches to research (qualitative/quantitative) and epistemology. * Theoretical underpinning in the articles. * Emphasis on original, empirical work as against descriptions of other people’s research. | |

You will note from Case Study 14.1 that the journal editors have made it as transparent as possible as to what they are looking for. Note also that they want empirical research, not a reworking of past articles or reports.They also provide a list of the kinds of articles they are looking for.

You might want to select a journal that focuses on the subject of your report. On the other hand, you might argue that the journal has failed to publish anything on your subject and that your article would make a vital contribution. This may be so, but do check that the subject is one that is covered in the gen- eral rubric of subjects of interest. If you are in doubt about whether a journal might publish your work, you can send an abstract to the journal editor asking if the subject would be worthy of consideration.

In submitting an article, it is advisable to include a short covering letter.This is not an opportunity to recapitulate the rationale, objectives and research methodology and results of the research.The editor will see these clearly from the actual article. The purpose of your letter is simply to offer the article for consid- eration and to thank the editor for his or her time.

Once you have submitted an article to an academic journal make sure that the editor acknowledges that it has been received.You can then sit back for weeks, and probably months, before you hear whether it is to be published. This is because the article first of all has to be accepted by the editor as worthy of fur- ther consideration, after which it will usually be sent to two or perhaps three peer reviewers.The review process is ‘blind’, that is, your name will not be divulged to the reviewers, who will work completely independently on their evaluations. It frequently happens that one reviewer likes the article and recommends publica- tion and another rejects it.The editor then has to either make a casting decision, or may send the article out for further review. Not surprisingly all this takes time. You are entitled to make the occasional inquiry as to how the review process is going (just in case the busy editor has forgotten about you!), but it is best not to pester editors too much.They have a difficult and often thankless, unpaid task.

The following is a typical outline for an academic article.

**Title page** This includes the title itself, that should neatly summarize the main focus of the article.The title page should also include the name of the author and her/his institution, and acknowledgements (especially if the research has received external funding or assistance). The actual title itself should be short, and should specify exactly what the article is about. If the title is rather long, you could con- sider using the less significant element of it as a ‘strap line’. For example:

*The influence of improved process control systems and resource allocation on widget production through the use of a case study.*

This could read:

*Case study: widget production improvement – process control systems and resource allocation.*

**Abstract** The abstract provides a concise summary of the article (often between 150 and 200 words).The actual length of the abstract will usually be specified by the journal’s Note to Contributors. This is a very important section because it may be the only part of the article that some people read. Herbert (1990) suggests that the abstract should contain:

* The main hypothesis.
* A synopsis of the methods used.
* A summary of the major findings.
* A brief mention of subjects and materials.
* The conclusions based on the results.
* Design procedures.

In addition to the abstract, and perhaps adjacent to it, some journals ask for a list of keywords. In paper-based versions of the journal, these can provide readers with an indication of whether they want to read the article or not. For Web-based abstracting services, typing in one of these keywords will link another researcher to a list of articles containing this keyword, including your article.

**Introduction** This explains the purpose of the study, the rationale for under- taking it and some background information. The Introduction also provides an opportunity to outline the main research questions and hypotheses (if any). If the research is based on findings in an organization, it is useful to provide the reader with some additional details on, say, the history of the organization, its size, prod- ucts or services, mission, etc.

**Literature review** After reading the literature review, the reader should understand why the study is being undertaken and how and why it is adding to the store of knowledge.A literature review written for an academic journal will usually be shorter than the kind of very comprehensive review that would be written for an academic thesis or dissertation. It should be self-evident after reading the literature review as to why the study’s research questions (and hypotheses, if any) have been selected. Take care, however, not to merely label this section ‘Literature review’ even though this is what it is. Help and inspire the reader by choosing a title that reflects what the section is really about. If several themes or issues are being addressed, it may be necessary to write a number of literature sections, each with an appropriate heading.

**Methodology** This is a key section and will be evaluated meticulously by reviewers and readers, and, of course, by anyone seeking to replicate the findings.The methodo- logy should follow the principles outlined in many chapters in this book, including:

* A description of the research context: what kind of organization or setting, what were the original specifications for the study, what practical or ethical considerations were evident?
* The processes of sample selection: how was the sample selected? When was it selected: at the commencement of the study, or iteratively during it?
* A description of, and justification for, the sample: how many participants were there, what were their characteristics and how representative were they of the population?
* The research procedure, including the kinds of research methodology (experi- mental, survey, grounded study, etc.), research tools used and evidence for the validity, reliability and credibility of these tools.
* The duration, number and timing of the data gathering sessions: if used, how were interviewers or observers trained, what instructions were given to respondents?
* How were the data analysed?

**Results** As the title suggests, this is the section in which you report on your findings. This may be in the form of descriptive text, tables and figures (recall Chapter 12) or through selected quotations. The key word here is ‘selected’. Quotations should only be used where the comments themselves are revealing or interesting – they should not be used to carry the main burden of a description or argument. Quotations should also be used sparingly; try to avoid the pheno- menon of ‘death by quotation’.

Ensure that the results section is precisely this and not a discussion or com- mentary (which comes in the following section). The easiest way of differentiat- ing between the two sections is that the Results should deal with *what* happened, while the Discussion section should deal with *why* (that is, the analysis). Make sure that you do not mix the two.

**Discussion** The Discussion section, using the data (Results), presents answers to the original research questions and/or hypotheses. In doing this, it is particularly important to refer back to the literature review section, so that comparisons and contrasts can be drawn out between what your research found and what the liter- ature suggested you might expect. In some cases you may be confirming the the- oretical propositions from the literature, but within new (say, organizational) contexts. In other cases you may be finding relationships between variables that few studies have explored. Remember, all research does not have to be so original or unique that it puts you in line for a Nobel Prize. Nevertheless, unless it has some- thing to add to knowledge, it is unlikely be considered worthy of publication.

**References** There are several types of referencing convention, one of the most widely used being the Harvard or author–date system, as used in this book.

Of course, what we have just discussed is quite a conventional format. Journals that take a more inductive, qualitative or ethnographic stance may dis- courage such a structured approach. The key, as has been suggested, is to look at these journals to see what approach they take.

**ETHICAL AND LEGAL CONSIDERATIONS**

We have dealt with ethical issues in a number of previous chapters, but it is worth exploring some of them here in the context of writing up the research as well as legal and copyright implications.

***The ethics of report writing***

Some of the information that your research reveals may be inconvenient, to you, a colleague or a line manager.A study, for example, might reveal shortfalls in efficiency, poor attitudes, errors and just bad organization. As a result, you may be tempted to present the results in a better light than they deserve. However, if the report is at an appropriate level of detail, other readers should be able to compare the data with your findings and recommendations and detect bias or misleading statements.

In terms of the process of producing a report, follow the advice given in previous chapters. If you have promised to respect confidentiality and not to reveal the sources of certain pieces of information, this, obviously, must be adhered to. Ensure that you apply the principles of informed consent both for participation in the study and at the reporting stage (if individuals can be identified).

***Legal issues***

Legal issues might arise through the process of conducting your research, and also at the report writing stage, for example, where you:

* Reveal your sources of information and use statements made by individuals – are they defamatory, libellous or in breach of sex discrimination laws?
* Present material – has it been published elsewhere and is it copyright? (see next section)
* Make recommendations – do they infringe the law?

Common sense suggests that whenever you are in doubt about whether anything you have written contravenes a legal provision, you should consult a legal expert.

***IP and copyright issues***

Intellectual property (IP) refers to creations of the mind and includes: inventions, literary and artistic works, names, images, symbols and designs. The four main types of IP are:

* Patents for inventions – new and improved products and processes that are capable of industrial application.
* Trade marks for brand identity – of goods and services, allowing distinctions to be made between different traders.
* Designs for product appearance.
* Copyright for material including literary and artistic material, sound record- ings, films, etc.

Copyright laws were first introduced in England in 1710 and now exist in most countries. While the precise nature of national copyright laws varies, the

basic premise is that authors need to obtain permission before using another author’s document, and must give the author appropriate acknowledgement.Take particular care when tempted to copy material from the Web.While websites are in the ‘public domain’, this does not mean that they are not protected by copy- right laws. It is only safe to copy Web material when the author has abandoned copyright ownership, it is clear that the copyright has expired, or if it is a site owned by the government.

In many countries, what is written by a person while at work, automati- cally, in most circumstances, becomes the property of their employer. This may well apply to the research report itself.

|  |  |
| --- | --- |
| **Activity 14.4** |  |
| For more details on copyright laws see the following website: <http://whatiscopyright.org/>  In particular take a look at the section of ‘Fair Use’. | |

**DEVELOPING A WRITING STYLE AND TONE**

The appropriateness of a particular writing style can only be measured in the con- text of who the report is being written for. Hence, a style that is designed to inspire or enthuse will be very different from one that is meant to criticize or warn. Since the purpose of most reports is functional rather than imaginative, it has been suggested that this style of writing ‘should be unobtrusive, an invisible medium, like a window pane through which the information can be clearly seen’ (Turk and Kirkman, 1989: 90). Too many writers (particularly those writing scientific or technical documents) use leaden prose, and a stiff, formal style, failing to instil variety into their language.

One of the keys to good style is *readability*, a factor determined by:

* The writer, through the careful selection of material, by signposting, and by using a variety of emphasis.
* The text, in terms of language (structures and vocabulary) and layout (e.g., headings).
* Readers, particularly their motivation and attitudes, and their overall interest in the report.

Booth (1991) suggests that clichés should be avoided, such as ‘light at the end of the tunnel’ and ‘at this moment in time’. Sexist, racist and ageist language must also be avoided, of course, and reference made to particular genders, races or ages only when they are relevant to the subject of the report.

At a practical level, readability is aided by generating a balance between the use of long and short sentences.A report that contains just long, verbose sentences

will be difficult to cognitively process and understand; conversely, a report based just on short, staccato sentences will appear disjointed and monotonous. Using sentences that vary in length will aid the reader’s attention, concentration and, therefore, understanding. The readability of text can be measured by a variety of indices, one of the most common of which is the Flesch index.

|  |  |
| --- | --- |
| **Activity 14.5 Measuring readability** |  |
| You can measure the readability of the text you are producing using one of a number of alternative measuring indices. Microsoft Word, for example, can be used to give you both a Flesch Reading Ease score and a Flesch–Kincaid Grade Level score. For the Flesch readability score, text is rated on a 100- point scale. The higher the score, the easier the text is to understand. Most documents aim for a score of at least 60–70.  Perform a Flesch readability score on your own report. If this is not already set up in your program, go to the Help facility in Word and type in ‘readability’. Follow the instructions to set up the readability statistics tool. | |

The use of long, technical or unfamiliar words also affects readability. But, it is not the length in itself that is the problem. For example, the word ‘organiza- tion’ has many syllables, but would not cause the average reader any problems. As Turk and Kirkman (1989) warn, it is the combination of unfamiliarity with length that can inhibit readability. Unfamiliarity itself is linked to the frequency with which a word appears. Technical terms, in particular, will only be familiar to an audience that is also knowledgeable and competent in this field. So, in writing technical reports, you need to be particularly careful that either the terms you use are clearly explained, or that they are likely to be well known to your audience. Jargon can be useful because it can be used as a short and convenient way to name new ideas and concepts. Technical reports would be lost without it. But it must also be used with care since, if it is overused, or used in an attempt to give an air of importance, it can obscure the central message of the report.

Turk and Kirkman (1989) also warn against the use of nominalization, that is,

the habit of turning verbs into nouns.Take, for example, a perfectly good sentence:

*The survey collected data on customer attitudes, showing that ….*

Nominalizing the verb in this sentence, ‘collected’, gives us the following nomi- nalized sentence:

*Collection of the data through the survey revealed customer attitudes, which showed that …*

Nominalization reduces the effectiveness of the written style because it produces a passive sentence and also forces the writer to insert an additional verb,‘revealed’. While it is tempting to use passive forms of writing because they add a sense of

detachment and perhaps spurious objectivity to the report, they also make it longer, more complex and lacking in dynamism.

The tone of a report relates to the general mood of the finished text. It is important, for example, not to betray personal feelings such as anger, frustration, jealously, resentment or anxiety in the report, even if you are feeling these emo- tions.The overall tone of a report should reflect the nature of its message.

**THE REVIEW PROCESS**

It is difficult to overstate the importance of a review process.The research task is usually a long and arduous one, sometimes involving unexpected and unwelcome surprises.You have struggled through it and probably along the way become not only interested but quite committed to its subject and even its findings. You are also probably quite tired and even a little bored at reading or re-reading what you have written. You are, therefore, the very last person who should be evaluating and reviewing your work! You are now in desperate need of an ‘outsider’s’ detached view of what you have created. Selecting an appropriate reviewer may be diffi- cult, so plan this well in advance. In ‘commissioning’ the review, ask that the reviewer be as constructively critical as possible, since it is far better to identify real problems now rather than after the project has been delivered. Ask the reviewer to consider, in the light of the intended audience, the:

* Overall argument: is it understandable, consistent and congruent with the stated aims of the project?
* Structure of the report – is it logical and easy to follow?
* Language and tone – is it suitable and consistent?
* Presentation of the report – is the look and ‘feel’ appropriate?
* Grammar and punctuation – are they accurate?

If the report is intended for a very senior audience, then you will need to go through a number of iterations, ideally using a number of experienced and expert reviewers. If the report is a dissertation or thesis, intended for assessment as part of an academic programme, then obtaining a review from someone familiar with the subject matter would be useful.

**PRESENTATIONS**

Sometimes you might be asked to present both a written report and give an aural presentation, or even just a presentation alone. Academic kinds of presentation can take the form of a ‘viva’ where you are questioned by a group of experts, which usually includes your project supervisor and at least one external academic (usually in the role of the external examiner). The format for such a meeting can vary widely. In some parts of continental Europe, for example, the viva is an open event, at which members of the public may not only attend, but also ask questions.

In a business environment, the presentation may be to a project team or a management or executive board. The style and depth of the presentation will be largely determined by whether the recipients of the presentation have previously read the report. If they have read the report or are at least familiar with it, then you should concentrate on the background, highlight key points, and summarize implications and recommendations (if any). In giving aural presentations it is par- ticularly important to be able to anticipate questions (especially difficult ones). It helps if you are able to be critically reflective about your own work and have the skill of identifying the weaknesses and contradictions in your report. If you fail to do this, recipients of the aural presentation will do this for you – probably to your discomfort.

If recipients have not read the report, your role is to summarize its aims,

methodology and findings as clearly as possible and to point listeners to key sections if they wish to refer to them in more detail at a later time. It is important not to get too bogged down in detail or to confuse or alienate the audience.

**SUMMARY**

* + Understand the needs and interests of your intended audience and write for them.
  + Plan the report writing process, allowing yourself sufficient time to write the report and resources to aid its completion.
  + Different structures are required for case study reports, organizational and techni- cal reports and academic dissertations and journal articles.
  + A common structure for an organizational report is one that presents the substan- tive arguments and findings at the beginning, using the rest of the report to support them.
  + Dissertations and theses usually contain an abstract, an Introduction, several theo- retical chapters, plus chapters on research Methodology, Findings, Analysis and Conclusion and/or Recommendations.
  + The precise structure of journal articles is determined by the journal in question, but such articles will usually contain, amongst other sections, a strong, theoretical underpinning.
  + Some of the main ethical considerations to think about when writing up research include maintaining confidentiality and taking care not to breach copyright laws. Be particularly careful when copying material from the Web.
  + Style and presentation are important for the impact of a research report and are improved through practice and redrafting. Expert reviewers are of value in this process.

**Summary of web links**

<http://whatiscopyright.org/>

**Further reading**

Turk, C. and Kirkman, J. (1989) *Effective Writing: Improving Scientific, Technical and Business Communication*, 2nd edn. London: E.&F.N. Spon. A very readable book that offers a wealth of practical advice on writing reports.

Rudestam, K.E. and Newton, R.R. (1992) *Surviving your Dissertation: A Comprehensive Guide to Content and Process*. Newbury Park, CA: Sage. Provides practical guidance on selecting topics, and what the literature review, methods and results chapters should contain.

**Research and Change in the Real World**

**PART E**

**Action research and change**

**15**

**Chapter objectives**

**After reading this chapter you will be able to:**

* **Distinguish between action research and other research methodologies.**
* **Distinguish between the variety of approaches within action research.**
* **Plan a project, keeping in mind some of the potential limi- tations of action research.**
* **Describe the processes involved in conducting an action research project, and methods for gathering data.**

Part E of this book is devoted to action research because this methodology symbolizes much of what modern research is about – analysing the world but also trying to change it.Whereas some research paradigms may be content to add to the store of knowledge, action research asks the question:‘What can I do about it?’ In addressing real world problems, the action researcher becomes directly involved in the research process as a *change agent*, devoted not only to studying organizations and processes but also to improving them. Contrast this with other research par- adigms where the researcher is seen as a detached scientist, intent on avoiding any action that might bias or tarnish the results. Action research, in contrast, is com- mitted and intentional but also informed and systematic. Lincoln (2001) sees strong connections, for example, between action research and constructivism, both of which claim the impossibility of value-free knowledge. But action researchers do not simply throw themselves into the research process. As we will see, there are planning, implementation and ethical issues that need addressing.

The term ‘action research’ was first coined by Lewin in 1946, by which he

meant a process through which theory building and research on practical prob- lems should be combined. Given the context of post-war reconstruction in which the theory was developed, it is not surprising that Lewin viewed action research

as a way of improving social behaviour and encouraging social change. But his approach to such change was similar to the contemporary, traditional, scientific paradigm in that it recognized the value of experimentation and the importance of creating knowledge. But, while traditional science begins with substantial knowledge about hypothetical relationships, action research begins with very few facts. Lewin also argued that it was important to conduct social experiments in natural, social settings, not in the artificial world of controlled laboratory envi- ronments. Action research is also gestaltist in origin, that is, it sees issues as only being understood not through the study of a single variable, but within a holistic, complex social system.

Unfortunately, Lewin never wrote a systematic statement of his views before his death in 1947. Hence, as Dickens and Watkins (1999) note, there is still no definitive approach to action research and no unified theory. However, according to Bowling (1997, cited in Badger, 2000), Lewin’s concept of action research as a means of social engineering has now been replaced by one that emphasizes raising awareness, empowerment and collaboration. There are still, however, a number of disparate definitions and characterizations of action research. McKay and Marshall (2001) even claim that the practice of action research is somewhat enigmatic, with few guidelines for action researchers to follow.This chapter, however, hopes, within the constraints just identified, to offer some guidelines to practice.

**WHAT IS ACTION RESEARCH?**

The term action research is a generic one and has been used to describe a bewil- dering range of activities and methods. In brief, however, action research is an approach that ‘focuses on simultaneous action and research in a participative manner’ (Coghlan and Brannick, 2001: 7).Within this approach there are varied method- ologies, each with their own priorities and modes of inquiry (although there are as many overlaps and similarities between the approaches as there are distinctions). Some, for example, focus on how communities can enact change, particularly challenging issues such as injustice and social exclusion. Others are based in a more organizational context and may include how professional practitioners can improve their own professional practice. All approaches, however, have at least three common features:

* Research subjects are themselves researchers or involved in a democratic part- nership with a researcher.
* Research is seen as an agent of change.
* Data are generated from the direct experiences of research participants.

A mode of action research that takes this latter point particularly seriously is *participatory action research* (PAR). McTaggart (1997) warns that participation is much more than mere involvement. Authentic participation means immersing people in the focus of the enquiry and the research method, and involving them in data collection and analysis. One of the primary aims of PAR is to transform

situations or structures in an egalitarian manner. Hence, it has been used to deal with issues such as inner-city and rural poverty, education, mental health, disability and domestic violence. In the 1990s, however, PAR has also been taken up as a legitimate research approach by powerful agencies such as government depart- ments, universities and multinational companies. In 1999, for example, the World Bank commissioned a ‘Consultation with the Poor’ involving over 20,000 people in 23 countries. Gaventa and Cornwall argue that the key element in PAR is a process of reflection, social learning and the development of ‘critical conscious- ness’ (2001: 76). This is particularly so among oppressed groups of people, where non-experts play a central role (Park, 2001).

In contrast, another type of action research is what Coghlan (2001) terms ‘*insider action research’*, in which managers are engaged in action research projects in their own organizations. Often, these projects are undertaken as part of an aca- demic programme of study such as an executive MBA. The kinds of issues addressed often include systems improvement, organizational learning and the management of change. One of the advantages of adopting insider action research is that managers have an intimate knowledge of the organization being studied – they know its culture, its jargon and its personal networks.They can also participate freely in discussions or merely observe what is going on without people neces- sarily being aware that they are being researched. On the other hand, it may be difficult at times to maintain a sense of detachment and it may sometimes prove difficult for an insider to cross departmental, hierarchical or network boundaries.

An alternative approach is *external action research*, where the researcher may be independent of the professional context, but work within it and alongside pro- fessional practitioners (for example, business leaders, managers, trainers or health professionals) to achieve change. Hence, action research is a process of collabora- tion for bringing about change. The exact nature of this collaboration, however, may be problematic.

|  |  |
| --- | --- |
| **Activity 15.1** |  |
| Examine each of the following statements, only two of which are typical of action research statements. Which are they?   1. What is happening here? 2. How can I improve the quality of my professional practice? 3. How can this research method be improved? 4. What implications does my research have for all practitioners in my profession?   *Suggested answers are provided at the end of the chapter.* | |

Another approach to action research is *action science,* which attempts to inte- grate practical problem solving with theory building and change. Friedman (2001) acknowledges that it is difficult to locate a single, comprehensive definition

of action science, but suggests that it involves a form of social practice which integrates both the production and use of knowledge in order to promote learn- ing with and among individuals and systems.The objective of action science is to help practitioners to ‘discover the tacit choices they have made about their per- ceptions of reality, about their goals and about their strategies for achieving them (Friedman, 2001: 160). To achieve this, communities of practice are created in which both practitioners and researchers make explicit their interpretations, which can then be made subject to rigorous testing for their validity.

Gummesson (2000) divides action science into *societal action science* and *man- agement action science*. The former is concerned with the kinds of macro social, political and economic issues that arise, say, when a company is threatened with closure.This could involve, for example, a participatory study by groups of workers who are directly threatened by the closure. Such an approach stems from a belief that research should not lie in the hands of ‘professional experts’, who will have their own agendas and subjective biases.

Management action science is focused on a company as a business. Here, the action researcher has the difficult task of tackling issues and producing results that are of value to both science and to business. Thus, from a theoreti- cal perspective, the action researcher will seek to contribute to knowledge, understanding and theoretical perspectives. But this must also be knowledge that can be applied and ‘validated in action’ (Gummesson, 2000: 119). This means that the life of the action scientist is often prone to role conflict and ambiguity. Another aspect of management action science is that it is interactive, that is, it requires close collaboration between the researcher and the company client. Again, this may pose problems for the researcher who may be pressurized to change original research designs in the interests of producing short-term actionable results.

Some important differences between participant action research and action

science are highlighted by Whyte (1991). Action science focuses more heavily on interpersonal relationships, but also requires the intervention team to keep con- trol of both the intervention and the research process (often as detached observers). In contrast, participatory action research, for example, involves greater sharing of control between practitioners and researchers.

Finally, *cooperative inquiry* is related to action research in that both focus on research *with* people rather than research *on* people. Where cooperative inquiry differs is in the way collaboration between researchers and participants takes place. Heron and Reason describe how co-subjects become ‘immersed in and engaged with their action and experience’ (2001: 180).They develop a degree of co-openness to what is happening through deep experiential engagement, often generated through music, drawing, drama and dance.

We can see, then, that action research involves quite a varied range of approaches to research both in terms of the relationship between researcher and participants and the focus of the research itself. Table 15.1 provides a summary of the kinds of action research projects that have been undertaken in different sectors.

**TABLE 15.1** SECTORS WHERE ACTION RESEARCH PROJECTS HAVE BEEN USED

**Sector Type of project**

Education School curriculum

Evaluation Classroom processes Parent participation

Health Infant health programmes

Drug abuse programmes Health promotion projects Community health projects

Social work Youth programmes Parenting programmes

Organizational development Planning

Change processes Training programmes

Human resource development

Urban and economic development Urban planning projects

Community planning projects Housing needs surveys Youth housing needs

*Source*: Adapted from Stringer, 1999.

**THE ACTION RESEARCH PROCESS**

McNiff et al. (1996) caution that it is wise at the outset to be very realistic about what action research can achieve.You may also have to recognize that it is easier to change your own perspectives and professional practice than that of others.The success of an action research project will depend, in large measure, on your suc- cess with working with other people, so you need to identify the range of peo- ple who will be involved. These will certainly include *participants*, who may include colleagues or fellow employees. It is essential to pay very close attention to gaining access and to maintaining relationships.This is helped by keeping par- ticipants informed about the progress of the research and by thanking them for their assistance. But other possible collaborative sources might include:

* *Critical colleagues*, those who work with you and who may be willing to dis- cuss your research, critically but supportively. It is advisable to negotiate the ground rules for engagement at the start of the project.
* *Adviser/mentor/tutor*, whose role is to challenge your thinking so that the direction of the project can be refocused or ideas reshaped.
* *Action research colleagues*, who may be fellow students on a taught programme or colleagues in a professional development programme.These people are key for providing support and sharing information and resources.
* *The validating group* of colleagues, managers or fellow professionals who may be used to comment critically on the outcomes of the project (see Validating action research p. 387).

Failure to engage the cooperation of people who can give you advice and sup- port may actually endanger your project (see Case Study 15.2).

As Stringer (1999) shows, the aim of action research is not to present final- ized ‘answers’ to problems, but to reveal the different truths and realities (construc- tions) held legitimately by different groups and individuals. People with identical information will interpret it in different ways, depending on their previous expe- riences, worldview and culture.The task of action researchers, therefore, it to:

*Develop a context in which individuals and groups with divergent perceptions and interpreta- tions can formulate a construction of their situation that makes sense to them all – a joint con- struction.* (Stringer, 1999: 45)

The action research process itself, as originally conceived by Lewin, is a cyclical one, working through a series of steps including planning, action and observing and evaluating the effects of that action. Note that these stages overlap, meaning that some activities are running in parallel to each other. For example, a team could plan a project, and begin to execute some change, but then modify these plans on the basis of lessons learnt through action. Each of these steps is continu- ally monitored to make adjustments as needed (see Figure 15.1). McTaggart (1997) suggests an alternative approach. Rather than see this as an entire project, a good way to begin is to collect some initial data in an area of general interest (a reconnaissance), then to reflect before making a plan for action. Hence, execution (albeit on a small scale) proceeds planning.

While this section has looked at action research as a neatly planned and

orderly process, Dickens and Watkins warn that this is not always the case and that ‘it can go forward, backward, and all directions at once’ (1999: 135). We will explore each of the core action research stages in more detail next.

***Planning: getting the focus right***

Choosing a focus for the action research project may, at first sight, seem a rela- tively simple task, yet it is one that often causes researchers the most difficulty.This is because there are often so many issues that could be addressed, the problem is prioritizing between them. One of the keys to identifying a suitable research topic is having a sense of commitment to improvement (McNiff et al., 1996). If under- taking research within your own professional practice, you could, for example, ask yourself questions such as:

* How can I reduce my stress levels at work?
* How can we improve the quality of the consultancy and advice we give in the organization?

Planning *Planning*



*Reflecting*

Acting

*Acting*

Reflecting

Observing *Observing*

Monitoring

**FIGURE 15.1** THE ACTION RESEARCH MODEL

* How can we achieve better working relationships within the company’s project teams?

But there is an important difference between focusing on an issue that you consider vital or interesting and one that can actually be practically addressed.You must, then, also consider the matter of feasibility – do I have the time, access to participants and resources to actually tackle this issue and to bring about change? If the answer to the above question is ‘Yes’ then you will probably want to start with at least a tentative working hypothesis: ‘If I do this, then it is likely that X might happen’. Unlike experimental research, this is not an attempt to identify causal relationships between variables. It is trying to identify the kinds of actions that can lead to positive change.

This means meeting with stakeholders to obtain a consensus on the actions that are planned.As Stringer (1999) makes clear, it is essential that the voices of all are heard, so that appropriate goals can be set. For planning purposes, the focus becomes one of establishing:

* *Why* activities are required.
* *What* actions need to be taken.
* *How* tasks are to be accomplished.
* *Who* is to be responsible for each activity.
* *Where* the tasks are going to be performed.
* *When* the activities are going to commence and when they are to be completed.

Mumford (2001) advises that a formal ‘action’ document should be drawn up with precise specifications of processes, objectives and outputs, and that this should be signed by both management and the researcher and given to all interested parties. Avison et al. (2001) refer to such a document as ‘action warrants’ that define the authority under which action can be taken, specifying the balance of authority between researchers and internal organizational participants. Sometimes projects may not begin with an action warrant because they are relatively informal or the precise nature and scope of the problem have not been defined, or it is initially not seen as serious. Once the problem and research objectives become clearer, then an organization may decide it needs the sort of formal control structures that an action warrant can specify.

In aiming to get the focus of the research project right, it is vital to make

our own, personal values explicit, so that we can explore the relationship between these values and our own behaviour. Although we all have value systems, we may be forced by organizational constraints to act in ways that contradict them. For example, a manager might believe strongly in democratic forms of work organi- zation, but act in quite authoritarian ways towards employees. Action research:

*is a way of working that helps us to identify the things we believe in and then work systemat- ically and collaboratively one step at a time, to making them come true.* (McNiff et al., 1996)

|  |  |
| --- | --- |
| **Activity 15.2** |  |
| In planning your own action research project, (a) make a list of the likely par- ticipants (other than yourself); (b) identify those who might be prepared to give you critical advice and support; (c) select a suitable action research subject;  (d) formulate a provisional hypothesis for the project. | |

If you are coming into an action research project from the outside, you will need to make contact with key stakeholders and interest groups as quickly as pos- sible.These groups might include not only those people most directly concerned with the issue, but also managers and sponsors. As we saw in Chapter 10, it may also be necessary to contact, and get to know, unofficial opinion leaders or gate- keepers.

***Acting: gathering evidence***

Having identified the focus of your research, the next step is deciding what sort of actions to initiate and then what data to gather. It is usually best to focus on the kinds of performance indicators that show whether you, or others who are the focus of your research, are being effective in initiating change or not. Hence, if you were looking at improving communications between yourself and a group of clients, then you could try to locate critical incidents of when communication

was progressing well, and when it was subject to problems. Data collection should be as comprehensive as possible, because important insights may only emerge once the data are being analysed. This means that you may have to use a wide range of data gathering tools, such as interviews (individual and focus groups), participant or non-participant observation, informal meetings and document analysis. For every piece of data, ensure that you record the date, time, place and the people who were present. Transcripts of conversations and records of meet- ings should be authenticated by getting them signed by a relevant participant.

The main problem is knowing how much data to gather without the process becoming unwieldy and unmanageable. As usual, the key is aiming to achieve a representative selection from the possible range of data. So, if you are trying to investigate the working relationships of a team of 20 people, one approach would be to chose four of them, if you were sure that they were typical of the group as a whole. Stringer (1999) also advises you should ensure that the diversity of groups in a social setting are represented. For example, in conducting an action research project amongst the parents of school children, it would be important to ensure that different social classes and ethnic groups were represented.

Stringer also suggests four alternative frameworks for assisting the data gathering process, namely:

* *Interpretative questions*. Participants might be encouraged to work through these in order to extend their understanding of the problem.These questions might include: what are the key elements of the problem? How is the problem affecting us? Who is being affected?
* *Organizational review*. Participants should focus on analysing various features of their organization, including: the general mission or purpose of the organiza- tion; its goals and objectives; the structure of the organization, including roles and responsibilities and the efficiency or otherwise with which they are con- ducted; the factors that inhibit the enactment of these responsibilities.
* *Problem analysis*.This is similar to concept mapping, only here participants are asked to identify the problem itself, the antecedents that led up to it and the major consequences that have ensued.
* *Concept mapping*.This is used by stakeholders to understand how different key elements in the problem relate to each other. The facilitator begins by draw- ing a word that sums up the central problem. Participants then add new labels to the chart that represent other elements associated with the problem. They then decide how the issues are linked. An example of a concept map is illus- trated in Figure 15.2.

***Observing: analysing the impact***

Since action research is about taking action and often involves experimentation, action researchers have to take note of the impact of their actions. This might include providing authentic descriptions of what has been achieved*.* These may be either factual (for example, transcripts of conversations), subjective (such as,

Personality clashes

Hierarchies

Work deadlines

Lack of communication

Stress

Team conflict

**FIGURE 15.2** THE DATA GATHERING PROCESS: CONCEPT MAPPING OF TEAM CONFLICT WITHIN A WORKPLACE

diaries and personal reflections) or fictionalized accounts that preserve the anonymity of participants but are used to highlight issues explicitly.

On the other hand, the impact analysis might take the form of meetings of stakeholders to examine what has been achieved. This is not a case of looking at the techniques and procedures that guide action research, but exploring the ‘sense of unity that holds people to a collective vision of their world and inspires them to work together for the common good’ (Stringer, 1999: 121). There should be opportunities for participants to discuss their contributions and to describe what they will do and the way in which they will go about it.The key to action is par- ticipation, a shared intent, positive working relationships and inclusivity. Of course, disagreements and antagonisms might arise. The role of the action researcher is to maintain a neutral stance and to act as a mediator to heal conflict.

***Reflecting: evaluating the impact of the project***

As we have seen, the aim of action research is the attainment of change. So how will you evaluate that change has actually taken place? The best approach, before you even start the project, is to identify what criteria constitute evidence of change.Then, select a piece of evidence from the data that you think demonstrates this change and have the evidence judged (validated) by others. The individual action researcher is not in a position to say whether their actions have had an impact – it is for participants in the project to judge for themselves. But action research is not just about fostering change in organizations, it is about generating learning amongst the action research participants.This too needs to be a focus of reflection – what was learned, what is its value, can it be applied elsewhere?

Having cycled through the planning, acting, observing and reflecting stages (often a number of times), what should the action researcher have to show for it? Coghlan (2001) suggests that the outputs of action research should include evi- dence of:

* How researchers engaged in the steps of action research, how they recorded their data and how they were a true reflection of what was studied.
* How they challenged and tested their own assumptions and interpretations of what was happening on a continual basis.
* How they accessed different views of what was happening showing both con- firming and contradictory interpretations.
* How these interpretations and analysis were grounded in academic theory and how this theory both confirmed and challenged the analysis.

In contrast, Stringer (1999) argues that good action research projects have no well-defined ending. Instead, new realities emerge that extend the process of inquiry. What people should do is celebrate these achievements. Mumford (2001), however, talks explicitly about ‘getting out’ of the action research setting through the action researcher successfully handing over the knowledge needed by the group he or she has been working with, so that they can continue to solve their own problems. Hence, successful action research projects are not just about bringing about change in organi- zations, communities or networks, but about changing and empowering people.

**THE ROLE OF RESEARCHERS AND PARTICIPANTS**

In contrast to many other research methodologies, in action research the role of the researcher is seen as more of a facilitator than an ‘expert’. Stringer (1999) con- trasts action research with surveys, which he says are often limited in scope and ‘frequently riddled with the agendas, interests, and perspectives of the people who commissioned or constructed them’ (Stringer, 1999: 26). In action research, the researcher is a catalyst for achieving change by stimulating people to review their practices and to accept the need for change. But the researcher is not there to offer blueprints but to enable people to develop their own analysis of the issues facing them and the potential solutions. This might mean getting people to consider a range of possible solutions and their consequences. Once a plan has been decided, the role of the action researcher is to help in its implementation through analysing any weaknesses in the plan and by helping to locate resources (including human resources and the development of the necessary skills for the plan’s success).

Given the facilitative role of the action researcher, the relationships and

working processes between researcher and participants are of central importance. According to Stringer (1999), action research seeks to develop and maintain non- exploitative social and personal relationships and to enhance the social and emo- tional lives of those who participate. It is organized in democratic, therapeutic and equitable ways that should engender a community spirit. Table 15.2 summarizes some of the key elements that contribute to this.

**TABLE 15.2** ELEMENTS THAT CONTRIBUTE TO COMMUNITY RELATIONSHIPS IN ACTION RESEARCH

**Working principle Principle as implemented in action research community**

Relationships Promote feelings of equality for all involved Maintain harmony

Resolve conflicts openly

Encourage cooperative relationships Communication Listen attentively to people

Be truthful and sincere

Act in socially and culturally appropriate ways Regularly advise others as to what is happening

Participation Enable significant levels of involvement

Enable people to perform significant tasks

Provide support for people as they learn to act for themselves

Deal personally with people rather than with their representatives or agents

Inclusion Maximize the involvement of all relevant individuals

Ensure cooperation of other groups, agencies and organizations Ensure that all relevant groups benefit from activities

*Source*: Adapted from Stringer, 1999

|  |  |
| --- | --- |
| **Activity 15.3** |  |
| Take a look at the wealth of action research sources at:  [*http://www.goshen.edu/soan/soan96p.htm*](http://www.goshen.edu/soan/soan96p.htm)  Evaluate some of these sources and note any that may be of value in the future. | |

**METHODS OF DATA GATHERING**

After planning the action research project, the next question is how to gather the data. As in most research methods, a variety of techniques are available, many of them already discussed in some detail in this book.The key, however, it to ensure that data gathering is systematic and provides a permanent record of what has taken place. As usual, it is important to use a variety of methods if possible to allow for triangulation.

***Diaries***

Whatever data gathering tool is used, it is probably advisable to keep a diary throughout the action research project as it can, as a minimum, provide a factual description of events, dates and people. But diaries are useful for a whole number of other purposes, including providing:

* An *aide-mémoire* of short notes for later reflection.
* A detailed portrait of events to provide a ‘thick description’ for later reports.
* A reflective account through which the researcher makes tentative interpreta- tions of events, or through which the researcher records personal feelings and anxieties in order to try to understand them.
* An analytical tool that could contain a framing of the original research focus and a provisional analysis of the data as they are gathered.

If the action research project is a collaborative one, then it is also possible to write collaborative diaries.These can be written independently, and so provide a way of triangulating and checking for different recall or interpretations of events. Alternatively, they could be written interactively.The Internet offers some flexible facilities here. For example, one researcher could send an e-mail offering opinions or reflections on a topic to a co-researcher who would reply; the origi- nal researcher would reply to this, and so on. Hence, an interactive document is produced around a specific theme. Once the theme is exhausted, one of the researchers could send an e-mail on another subject. Alternatively, using a com- puter-based discussion forum, a group of action researchers or project participants could debate and comment on subjects through a continuous flow of threaded discussions.

***Observations, interviews and questionnaires***

Entire chapters of this book have been devoted to these data gathering methods and it is not the intention merely to repeat what has already been said. However, one way in which action research uses these methods differently, is that they are used in *collaboration* with others.Take the example of a group of consultants who frequently have to make presentations to company chief executives. They could set up an action research project in which they observe and video each other’s practice presentations and give feedback.

It is usually unwise to use a questionnaire in action research unless there are really good reasons for doing so.This is because they do not help to generate the forms of collaborative problem solving that action research requires. But the use of questionnaires is valid for discovering information that could not be ascer- tained in any other way, or for evaluating the effect of an action research inter- vention – again, if data cannot be gathered using other methods.

***Photography, audio and video recordings***

These media can be used either to stimulate discussion or recall events during the research process, or as a means of capturing evidence in data gathering. In the case of the research process, participants may sometimes need visual evidence to remind them of a situation or just to stimulate ideas. Photographs or video can be used to present evidence of changes that perhaps the action research project has

achieved. In the case of video, this is particularly true if we are talking about changes in human behaviour.

Audio is valuable because it can be used as a kind of talking diary that cap- tures an entire conversation (McNiff et al., 1996). Of course, this will often mean that the tape will have to be transcribed before it can be analysed.You may find it useful either to play the tape to your critical friends, or to show them the tran- script of the conversation.

***Memory work***

Memory work is used to uncover and analyse earlier understandings of social behaviour in personal and professional situations through the framework of cur- rent understanding. First used by feminist researchers, participants write stories about events or situations they have experienced in their lives. These narratives, which are written in the third person to create a sense of detachment, are then discussed and analysed by the group. Each member of the group then rewrites their original text in the light of the comments they have received. In the final phase, the original and rewritten texts of all group members are compared by the group. According to Schratz (1996), what is important is that the memory work process allows the group to explore issues and to learn.

An illustration of how action research data collection methods can be used in practice is given in Case Study 15.1.

**Case Study 15.1 Improving children’s health through action research**

The aim of the action research project was to improve the provision of child health surveillance in a community context (doctor’s surgeries rather than hospitals) and to develop a written framework for child health surveillance. The study was con- ducted over a 12 month period in 28 surgeries within one health district. Participants comprised between two and 11 primary care staff from each surgery, including at least one doctor and health visitor.

As is typical of action research projects, data were collected using a variety of methods, namely: direct observation of baby clinics by the research team, ques- tionnaires to parents, semistructured interviews with team members and analysis of child care health surveillance reviews recorded in personal child health records.The 28 practices were randomly assigned to two groups comprising 14 practices in each, with one of the groups used for the action research study, the other being the control.

In the action research group, action researchers facilitated team meetings in each practice at 4-monthly intervals.At these meetings, the data collected from the observations, questionnaires and interviews were discussed.This allowed the teams to analyse how child health care surveillance could be improved and what kind of changes should be made.

*(Continued)*

The results did not reveal a statistically significant difference between the two groups of practices in terms of parent satisfaction or return rate of child health sur- veillance reviews. But the teams involved in the action research project did decide to make changes in aspects of their professional practice. Communication and the use of child health records improved, and health visitors reported a greater feeling of empowerment. A framework for child health surveillance was developed that was acceptable to the practice teams.

*Source*: Adapted from Hampshire, 2000

|  |  |
| --- | --- |
| **Activity 15.4** |  |
| Given the research aim in Case Study 15.1, to what extent do you think that action research was the appropriate research methodology?  *Suggested answers are provided at the end of the chapter.* | |

**VALIDATING ACTION RESEARCH**

Given that action research can involve the quite personal observations and analysis of the researcher, using small samples or individual case studies, the issue of vali- dation is certainly no less important for this than for other research methodolo- gies. According to McNiff et al. (1996), the purpose of validation in action research is to:

* Test out key arguments with a critical audience to identify where there is a lack of clarity or focus.
* Sharpen claims to new knowledge and ensure that the data match these claims.
* Develop new ideas.

The starting place for establishing claims for the validity of action research is with the researcher. McNiff (1988) suggests that the researcher needs to demon- strate publicly that he or she has followed a system of disciplined inquiry. This includes checking that any judgements made about the data are reasonably fair and accurate.

Validation can be quite an informal process, but may also involve the use of formal groups, especially selected to scrutinize the outcomes of an action research project. These could include critical colleagues, advisers or mentors, or fellow action research colleagues working on the project. If formal groups are used, it is important to ensure that participants both understand and can empathize with the context of the research. Ideally, the group should also contain members from out- side the context who can provide a more detached and independent perspective.

Waterman (1998) argues that the process of validation in action research is strengthened by the ‘to-ing and fro-ing’ between the elements in the action research spiral (planning, acting, observing and reflection). Typically, action researchers are not satisfied with one turn of the action research spiral but will repeat the process several times, allowing for the refinement of ideas and practices. Of course, as we saw in Chapter 14, not all of those involved in action research would agree that validity is a necessary or feasible objective. Lincoln and Guba (1985), you may recall, argue that instead of validity, the aim, certainly of qualitative research, should be to establish the credibility of the research through forging confi- dence in the accuracy of its interpretations. As Grønhaug and Olson (1999) note, if the validity of research is founded on a notion of scientific knowledge, based upon rigorous testing of falsification, then action research may prove lacking. However, claims for the generalizability of findings may be made on the basis of systematic comparison of such findings with the results from other settings, and by conducting more research to examine the robustness of the generalizations. In a sense, this is not

too dissimilar to Flick’s (1998) notion of case study replication (see Chapter 6).

**ETHICS**

The issue of ethics has been raised in nearly every chapter of this book, and this last chapter is no exception. Action research is deeply embedded in an existing social organization, and failure to respect the general procedures of that organiza- tion will jeopardize the process of improvement. Badger (2000) suggests that, at least superficially, action research seems to pose few ethical dilemmas because it is based on a philosophy of collaboration for the mutual benefit of researchers and participants. Lathlean (1996, cited in Badger, 2000) contrasts action research with the ‘smash and grab’ approach of both positivist and interpretative traditions, who complete their study and leave their subjects to ‘clear up the mess’.Taking note of ethical principles for action research, however, still involves the usual array of requirements for negotiated access, confidentiality and allowing participants the right to withdraw.

***Negotiating access***

Access needs to be negotiated at various levels: within organizations or commu- nities, with individuals and with parents, guardians or supervisors.

**Organizations and communities**

You will probably first need to negotiate access to organizations or communities or to management in your own organization. After establishing contact, you will need to define your aims and objectives and get their agreement, in writing, to your research project. Be honest about what you are about to do, and if your objectives change, notify the sponsors immediately. Also note the warning of

Coghlan and Brannick (2001) that doing action research in your own organization is a political act which might even be construed by some as subversive.

**Participants**

Make it clear that they are not ‘subjects’ but participants and co-researchers.You are studying yourself in relation to them or their relationship to others. Either way, they are central to your research. However, while most commentators on action research tend to emphasize the democratic and inclusive nature of the action research process, Avison et al. (2001) argue that either practitioners or researchers have the upper hand in most aspects of control and authority. Their relationship, then, is not balanced in a democratic sense, so opening up the poten- tial for the abuse of power, influence and authority.

**Parents, guardians or supervisors**

Particularly if you are dealing with parents or guardians you need to inform them in writing of your intentions and to elicit their agreement, also in writing. You need to ensure that your research does not infringe any equal opportunities or human rights legislation.

|  |  |
| --- | --- |
| **Activity 15.5** |  |
| Take a look at the UN Convention of the Rights of the Child at: <http://www.unicef.org/crc/crc.htm>  Look particularly at issues of non-discrimination (Article 2), best interests of the child (Article 3), freedom of expression (Article 13), disabled children (Article 23), education (Articles 28 and 29). | |

***Maintaining an ethical stance***

**Promise of confidentiality** You need to make it clear that you will not reveal any information that is confidential or sensitive in nature, unless prior permission is obtained. If organizations and individuals are content to allow you to use the names of participants then you can do this, but otherwise use numbers or initials for identification.You also need to protect the confidentiality of your data, by get- ting other participants to check both the data and your interpretation of them for accuracy and balance. In some work situations, however, merely describe some- one’s role in an organization might immediately identify an individual.You need to negotiate or warn these individuals before publishing any report.

**The right to withdraw** Research participants must know that they can withdraw from the research at any time, and this right to withdraw must be respected. Lathlean (1996, cited in Badger, 2000), however, notes that action research might

involve the use of observation of group activity from which individuals could not withdraw, especially when the activity is related to collective working practices.

**Communication** Keep participants informed about the objectives of the project and how it is progressing. One idea is to produce project reports, but limit the dis- tribution of these only to the relevant interested parties. Communication should be used as a means of eliciting and encouraging suggestions and participation.

**Maintaining good faith** Never take anything for granted and try to anticipate areas where possible misunderstandings could arise. Check with people to see if their interpretations are the same as yours. Indeed, Mumford (2001) suggests that participants should be actively involved in writing up any final report or recom- mendations. Participants should also be consulted as to how descriptions of the action research project are to be published (Coghlan and Brannick, 2001).

By following these criteria it should be possible to ensure that the outcomes are objective and truthful in the sense that the understanding of meaning is directed towards the achievement of a possible consensus amongst actors (Winter, 1996). However, as Tickle (2001) points out, action researchers often face a practical dilemma between keeping all participants informed of what is happening and maintaining confidentiality.

|  |  |
| --- | --- |
| **Activity 15.6** |  |
| Taking note of the ethical issues outlined above, return to your plan for your action research project and include a set of ethical principles that you will need to address. In doing this, consider any documentation in the organization that deals with these issues and make yourself aware of any processes (such as gaining permission for conducting the research from senior managers or com- mittees). Make a note of any ethical problems you potentially face in your research diary, and maintain a reflective record of how you deal with them. | |

**LIMITATIONS OF ACTION RESEARCH**

While we have identified the effectiveness of the action research approach in par- ticular settings, like any research paradigm, it has its potential drawbacks and lim- itations. Hampshire (2000) reports on action research projects in the field of primary health care, where significant amounts of time and effort have to be expended on maintaining collaborative networks. Since action research studies, typically, take longer to complete than other approaches, staff turnover and peo- ple leaving the project can be disruptive. Also, while new knowledge generated through studies may lead to practical results, these may not be widely reported in the academic literature – hence, they do not reach the public domain, and their application to other situations may be limited. Another problem is that of

generalizability. Many action research projects are fairly unique or idiosyncratic in nature. Badger also warns that due to its very contextual focus, action research may only be capable of allowing ‘tentative generalization’ (2000: 202). On the whole, action researchers seem fairly divided as to whether generalization of the results of an action research project is either feasible or, indeed, worthwhile.

An honest evaluation of an actual action research project is presented by Waterson (2000) in the next, and last, Case Study.

**Case Study 15.2 The real world – when an action research project goes wrong**

In the mid-1990s in the UK, the role of social services departments was changed from being an assessor and provider of social care, to an assessor only, with care being purchased from public and private sector sources, depending on which was most appropriate.This new policy generated new forms of work responsibility and management priorities. Waterson (2000) reports on three phases of an action research project within one social service region that explored issues of organiza- tional progress in making these changes, problems that required solving and strate- gic questions that had emerged.

Despite the commitment of the researcher and the care with which the research was planned and undertaken, major problems ensued. During the latter phases of the pro- ject, the preliminary findings were forcefully challenged by the main management client. Interestingly, he objected to the qualitative nature of the research reports and appeared to want a more positivistic, deductive perspective, including the use of statistics. New statements had to be inserted into the report at the insistence of senior managers.The final circulation of the report was restricted to a small number of senior managers, not to all the many staff involved in providing information, as had been agreed at the out- set. Partly as a result of these difficulties, the impact of the project was minimal.

Why did this disappointing outcome occur? Waterson is instructive in point- ing to some of the causes. She argues that one problem was the multiple agendas of those involved in the project.The task of the researcher is to create knowledge that is reliable and trustworthy.The ground-level social workers, however, were pri- marily preoccupied with the immediate needs of their clients. Senior managers faced the challenges of implementing a radical government policy.These multiple agendas eventually led to conflicts that the action research reports emerging from the project simply could not hide. As Waterson succinctly comments, there is an underlying assumption in action research that researchers are powerful change agents when, in fact, it is senior managers who have the power to block change. She therefore recommends that action researchers:

* Use an independent mentor to provide support and advice.
* Bring in co-workers (researchers).
* Engage more proactively in contact with senior managers.
* Establish a steering group with the involvement of an external researcher.
* Make explicit at the outset the sort of action research model that is being used.
* Discuss strategies for making sure that the validity of all participants’ contribu- tions is recognized and that ways of handling conflict are planned.
* Emphasize that research findings on their own cannot achieve change.

|  |  |
| --- | --- |
| **Activity 15.7** |  |
| Evaluate the recommendations at the end of Case Study 15.2. Do you agree with them? Are they all practical? Are there any other recommendations that you would make to strengthen the potential success of an action research project? | |

**SUMMARY**

* + Action research is used to address real world problems, with the researcher becom- ing actively involved in the research process as a change agent.
  + Often, action researchers are professional practitioners who use action research methodology as a means of researching into and changing their own professional practice.
  + Action research involves a cyclical process of planning, acting, observing and reflecting.
  + Methods of data collection include: diaries and logs, documents, observations, questionnaires, interviews, memory work (writing stories about events) and the analysis of photographs, audio and video recordings.
  + The data gathered through action research can be validated through eliciting the views of critical colleagues, advisers or mentors or fellow action researchers.
  + Action research must avoid the ‘smash and grab’ mentality. The usual ethical prin- ciples must be adhered to, including negotiating access, promises of confidential- ity, guaranteeing the right of participants to withdraw and checking to see if participants agree with the interpretations emerging from the research.
  + One of the drawbacks of action research is that it often takes considerable resources, including time, to complete. Also many action research projects tend to be fairly unique and difficult to generalize. However, claims for generalizability may be strengthened by the replication of findings across a number of contexts.

**SUMMARY OF WEB LINKS**

<http://www.goshen.edu/soan/soan96p.htm> <http://www.unicef.org/crc/crc.htm>

**Further reading**

Coghlan, D. and Brannick, T. (2001) *Doing Action Research in Your Own Organization*. London: Sage. An accessible book that deals both with the prin- ciples and processes of action research, and the challenges of conducting an internal action research project.

Reason, P. and Bradbury, H. (eds) (2001) *Handbook of Action Research: Participative Inquiry and Practice*. London: Sage. Aptly called a handbook since this very comprehensive volume contains chapters on the many approaches to action research as well as a wide range of case studies

Stringer, E.T. (1999) *Action Research,* 2nd edn. Thousand Oaks, CA: Sage. A comprehensive and practical guide for those intending to conduct an action research project.

Whyte, W.F. (ed.) (1991) *Participatory Action Research.* Newbury Park, CA: Sage. Describes some of the principles of participatory action research, which are then illustrated through a series of case studies.

|  |  |
| --- | --- |
| **Suggested answers for Activity 15.1** |  |
| Action research asks ‘What is happening here?’ and is a process that seeks to improve the professional practice of the action researcher and those col- leagues who take part in the project. Since the focus is often highly localized and contextual, it does not usually make strong claims for generalizability and, hence, would rarely claim to be able to change practices across a profession. | |

|  |  |
| --- | --- |
| **Suggested answers for Activity 15.4** |  |
| Since the focus of the project is on improvement and change within a profes- sional context, action research would appear to be an ideal methodology. This methodology encourages the active engagement of a range of participants who, through the action research process, come to value their contribution and to ‘own’ the changes that are made. | |

**Glossary of Terms**

Accretion measure A type of unobtrusive measure that arises from the deposit

of material (e.g. graffiti or litter) that can be analysed as having a significance.

Action research Research that involves close collaboration between

researchers and practitioners, and which usually aims to achieve measurable, practical benefits for the company, organization or community.

Analysis of variance A statistical test used to determine whether there (ANOVA) are differences between two or amongst three or more

groups on one or more variables. ANOVA is determined using the *F*-test.

Analytic survey A survey design that uses a quasi-experimental approach

that attempts to measure the impact of independent vari- ables on dependent variables, while controlling for extra- neous variables.

Anonymity An assurance that data will not be traceable to participants

in a research project.

A posteriori The outcome of, and dependent on, observation or direct

experience.

A priori A term indicating an idea derived from theory rather than practice.

Areas of acceptance or For a one-tailed hypothesis test, the area of rejection rejection is either the upper or lower tail of the distribution. For a

two-tailed test both tails are used.

Association The tendency of two events to occur together. When applied

to variables it is more usual to refer to this as a correlation.

Attrition The reduction in the number of people involved in a study. If more participants withdraw from one group than another, this can threaten the internal validity of a study.

Audit trail The presentation of material gathered within a naturalistic

enquiry that allows other researchers to trace the original researcher’s analysis and conclusions.

Behaviour sampling An observational sampling method in which subjects are observed and occurrences of particular types of behaviour are recorded.

Bias In general, any influence that distorts the results of a study. In statistics, a case of systematic error in a statistical result.

Case The smallest unit of analysis; an element of a sample or population.

Case study A research design focusing on one person or sample. Case studies provide limited information on a single issue, person or organization. There are dangers in generalizing from such limited samples, but results may be indicative of trends.

Categorical data Data that include both nominal and ordinal data. Cell Area containing values in a table of data.

Census The measurement of a complete population rather than a sample – particularly useful when researching organizations.

Central tendency A measure of the typicality or centrality of a set of scores, the main measures of which are the mean, median and mode.

chi-square distribution Statistical test used with nominal data to determine if pat- terns or characteristics are common across populations.

chi-square test How well observed data fit an expected or theoretical distri- bution.

Closed question A question where the possible answers are predetermined.

Cluster sampling A sampling strategy involving successive sampling of units or clusters, progressing from larger units to smaller ones.

Coding The process of transforming raw data into a standardized format for data analysis. In qualitative research this means attaching numerical values to categories; in qualitative research it means identifying recurrent words, concepts or themes.

Coding frame A template of key coding instructions for each variable in a study (e.g. Agree  1).

Concept mapping Producing a diagram showing the relationship between con- cepts in order to understand them.

Concurrent validity The extent to which test scores represent an individual’s cur- rent ability. For example, are the results of a recent aptitude test similar to the individual’s current work performance?

Confidence interval This identifies a range of values that includes the true pop- ulation value of a particular characteristic at a specified probability level (usually 95 per cent).

Confounding variable A variable, other than the variable(s) under investigation,

which may distort the results of experimental research, and so has to be controlled for.

Construct The particular way in which an individual expresses meaning about a concept.

Construct validity The extent to which an instrument measures a theoretical

concept (construct) under investigation.

Content analysis The examination of qualitative data by either qualitative or

quantitative methods by systematically identifying special characteristics (classes or categories).

Content validity An estimate of the extent to which a research tool takes

items from the subject domain being addressed, including not only cognitive topics but also behaviours.

Contingency table A display of frequencies for two or more variables.

Control group As part of an experimental design, a group *not* given the

intervention so that the effects of the intervention on the experimental group can be compared with it.

Controlled variable A variable, the effect of which has to be eliminated, in

researching the relationship between dependent and independent variables.

Convenience sampling A non-probability sampling strategy that uses the most

conveniently accessible people to participate in the study.

Conversational analysis The formal analysis of everyday conversations, often

based upon transcribed tape recordings.

Core category The central category that is used in grounded theory to

integrate all the categories identified.

Correlation The extent of an association between and among inter-

dependent variables such that when one variable changes, so does the other. Variables that are indepen- dent are not correlated.

Correlation coefficient (*r* ) A measure of the linear relationship between two numer-

ical values made on the same set of variables. It ranges from 1 (a perfectly negative relationship) to 1 (a per- fectly positive relationship), with 0 meaning no relation- ship. Linear relationships can be measured by Pearson’s product moment correlation; changes in one variable causing changes in another in a fixed direction can be measured by Kendall’s coefficient of rank correlation or Spearman’s rank correlation coefficient.

Covert participant Someone who participates in the activities of a research

study without revealing his or her identity as a researcher.

Credibility Seen by some supporters of qualitative approaches as

more important than validity or reliability. Established through building confidence in the accuracy of data gath- ering and interpretation.

Criterion-related validity Assessed through comparing the scores on an instrument

with one or more external criteria such as a well-established existing test.

Critical value (of a The absolute value that a test statistic must exceed distribution) if the null hypothesis is to be rejected.

Cross sectional A study in which data are collected at one time only, usu- ally for a large number of cases.

Data Findings and results which, if meaningful, become information. Data saturation The point at which data collection can cease, because

data have become repetitive with the emergence of no new themes or ideas.

Deductive approach Experimental approach that uses a priori questions or

hypotheses that the research will test.

Degrees of freedom The number of components in results that are free to vary.

Measured by the number of categories minus 1.

Dependent *t*-test Compares the difference or changes in ratio or interval (also referred to as a variables that is observed for two paired or matched paired *t*-test or a groups. It can also be used for before and after measures one-sample *t*-test) on the same group.

Dependent variable A variable that forms the focus of research, and depends

on another (the independent or explanatory variable).

Descriptive statistics Statistical methods used to describe data collected from a

specific sample (e.g. mean, mode, median, range, stan- dard deviation).

Design An approach to the collection of data that combines a validity of results with an economy of effort. Includes decisions on the case site, sample, data collection and analysis.

Deviation The difference between the value of a variable and the mean of its distribution.

Dichotomous variable Nominal variables that have only two outcomes such as

Yes/No, True/False, etc.

Discourse analysis The study of how both spoken and written language is

used in social contexts.

Distribution Values (e.g. age in years, scores on an aptitude test,

length of service in an organization) of a variable or char- acteristic (e.g. knowledge, behaviour, age, income or atti- tude) and the frequency of occurrence.

Emic view A term used by ethnographers to refer to an insider’s view of his or her own world (see etic).

Empirical data The results of experiments or observations used to check the validity of assertions.

Empiricism The idea that valid knowledge can only be derived from what is observable, measurable or experienced.

Episodic records Archival records that are insufficiently complete to allow for the identification of trends.

Epistemology A branch of philosophy that considers the criteria for deter- mining what constitutes and what does not constitute valid knowledge.

Ethics The study of standards of conduct and values, and in research, how these impact on both the researcher and research subjects.

Ethnography A qualitative approach that seeks out the perspectives about the culture of individuals, groups or systems occurring in settings or ‘fields’. Originally associated with anthropology and sociology.

Ethnomethodology A research tradition that argues that people continually redefine themselves through their interactions with others.

Etic view A term used by ethnographers to describe an outsider’s view of a specific cultural group (see emic).

Evaluation The systematic collection of data about the characteristics of a programme, product, policy or service. Often performed to identify opportunities for change and improvement.

Expected frequencies Frequencies that are observed in a contingency table if the null hypothesis is true.

Expected value The mean of a sample distribution of a test statistic.

Experimental group In experimental research, the group of subjects who receive the experimental treatment, in contrast to the control group who do not.

Experimental research A research methodology based upon cause-and-effect relationships between independent and dependent variables by means of the manipulation of independent variables, control and randomization.

Ex post facto Research that is completed after changes have already occurred in the independent variables and without random assignment of the objects in the study.

External validity The extent to which research results can be generalized to the population as a whole.

Extraneous variable A variable that needs to be controlled for because it has the potential to adversely affect the results of a study.

Face validity The extent to which a measuring instrument appears to be measuring what it claims to measure.

Field notes Notes written when conducting interviews or observations in the field. They may include the researcher’s personal comments or interpretations.

Fieldwork The gathering of data at a research site.

Filter question A question designed to exclude some respondents or direct them to later questions in a questionnaire.

Fisher’s exact test Used to test the null hypothesis that nominal characteristics are not associated. Usually used when the sample size is too small for the chi-square test.

Focal sampling An observational sampling method in which a sampling unit (person, group, etc.) is observed for a specific time period and all measures of behaviour are recorded.

Focus group A group interview, usually framed around one issue.

Frame A repository of items from which a sample can be chosen (e.g. an organization’s internal telephone directory or an electoral register).

Frequency The number of items in a class or category.

Frequency count Calculation of frequencies to determine how many items fit into a category (e.g. number of sales per product, members of a team, men and women in the workforce).

*F*-value A statistic produced by performing an analysis of variance, indi- cating whether differences in means occurred by chance.

Gatekeepers Individuals who have the power or influence to grant or refuse access to a field or research setting.

Generalizability The extent to which the results of a study based upon evidence drawn from a sample can be applied to a population as a whole. Often referred to as external validity.

Goodness-of-fit How well a given set of data fit a distribution. It may be mea- sured by the chi-square statistic.

Grounded theory An inductive approach to the analysis of qualitative data involv- ing open, axial and selective coding.

Grouped data Data that have been collected into groups or classes for ease of reading or for assisting calculations.

Hermeneutics An approach based on the interpretation of literary texts and human behaviour.

Hypothesis A statement that should be capable of measurement about the relation between two or more variables. Testing hypotheses, and especially the null hypothesis, is part of inferential statistics.

Hypothetico-deductive Procedures through which a hypothesis is deduced from a method theory and expressed in terms of a relationship between two or more variables. Measurements are then made from

which the hypothesis is either accepted or rejected.

Ideographic An approach that emphasizes that explanation of human

behaviour is only possible through gaining access to par- ticipants’ subjective interpretations or culture.

Independent variable Used to explain or predict a result or outcome on the

dependent variable.

Induction The development of theory or inferences from observed or

empirical reality. It is associated with naturalism and the ‘grounded theory’ approach to theory formation. It is the opposite of deduction.

Inductive approach The establishment of facts on which theories or concepts

are later built, moving from specifics to generalizations.

Inference An assertion made on the basis of something else observed.

Inferential statistics Used to draw inferences from a sample being studied to a

larger population that the sample is drawn from.

Information Data expressed in a way that has meaning.

Informed consent The obtaining of voluntary participation in a research project

based on a full understanding of the likely benefits and risks.

Instrument A tool such as a questionnaire, survey or observation

schedule used to gather data as part of a research project.

Internal validity The extent to which changes in the dependent variable can

be attributed to the independent variable, rather than to an extraneous variable.

Inter-observer reliability The extent to which two or more observers agree on what

they have seen.

Interval scale A quantifiable, continuous scale that has an arbitrary zero

point (for example, the Fahrenheit and Celsius tempera- ture scales). Unlike ratio scales (where a score of 120 represents a figure twice as large as a score of 60), an IQ score of 120 (interval data) is not twice as large as one of 60.

Leading question A question that suggests a possible answer, and hence

promotes bias.

Likert scale A scale in which items represent different sub-concepts of

the measured object and responses are presented to indi- cate different degrees of agreement or disagreement with the item.

Literature review The selection of documents (published and unpublished)

on a topic, that contain information, ideas and evidence,

and the evaluation of these documents in relation to a particular piece of research.

Longitudinal study A research study that examines phenomena over a rela-

tively long period of time.

Manipulation Intentionally changing the value of an independent variable. Mann Whitney U-test See Wilcoxon rank-sum test.

Maturation A threat to internal validity caused by changes in the value

of the dependent variable that occurs without any interven- tion by the researcher.

Mean The arithmetic average of observations. A measure of cen- tral tendency for interval or ratio data.

Measures of central Used in descriptive statistics, comprising measures of tendency the mean, median and mode.

Measures of dispersion Descriptive statistics that describe the spread of numerical

data. They include measures of the range, standard devia- tion and percentiles.

Median A measure of central tendency where 50 per cent of obser- vations are above it and 50 per cent below.

Meta-analysis Quantitative techniques for synthesizing the results of a

large number of studies of a particular issue or topic.

Method The systematic approach towards the collection of data so that information can be obtained.

Methodology The analysis of, and the broad philosophical and theoretical

justification for, a particular method used in research, for example, action research.

Mode A measure of central tendency comprising the value of the observation that occurs most frequently.

Mortality A threat to the validity of the research caused by subjects prematurely withdrawing from the study.

Narratives The use of oral or life histories to capture personal lived

experiences.

Naturalistic paradigm A paradigm that assumes that there are multiple interpre-

tations of reality and that the goal of researchers is to work with people to understand how they construct their own reality within a social context.

Nominal scale Describes characteristics that have no numerical value

(e.g. the name of organizations, products, departments, etc). Sometimes referred to as a categorical scale.

Nomothetic Approaches that seek to construct a deductively tested set

of general theories that explain and predict human behav- iour. It is the opposite of ideographic.

Non-parametric tests Tests that do not make any assumption that the population

is normally distributed (sometimes called distribution-free tests). These include all tests involving the ranking of data, including Kendall’s rank correlation and Spearman’s rho.

Non-probability sampling Techniques used to draw a sample in such a way that

the findings will require judgement and interpretation before being applied to a population. Often necessary in practice.

Normal distribution Based on the assumption that the distribution of a popu-

lation will be a smooth, bell-shaped curve that is symmet- ric around the mean and where the mean, median and mode are equal. Symbolized by the Greek letter mu ().

Null hypothesis (*H0*) A statement of the relationship between two variables

which argues that no difference exists in the means, scores or other numerical values obtained for the two groups. These differences are statistically significant when the null hypothesis is rejected – suggesting that a difference does, in fact, exist.

Observed frequencies Frequency scores actually obtained through research –

in contrast to expected frequencies (see above).

One-sample *t*-test Also known as a dependent *t*-test or paired *t*-test. Used

for comparing a variable across two groups or within one group over time.

One-tailed test The area of a normal distribution curve showing the

region of rejection for the null hypothesis where the direction predicted by the hypothesis is known.

One-way ANOVA Used to test for differences for studies with one depen-

dent variable with ratio or interval data. This test uses the

*F*-statistic.

Ontology The study of the essence of phenomena and the nature of their existence.

Open question A question without fixed categories of answers.

Operational definition A concise statement that assigns meaning to a construct or

variable by specifying the activities necessary to measure it.

Ordinal scale An ordering or ranking of values with no implication that

the differences between the values are equal. Examples include: Strongly agree, Agree, Disagree and Strongly disagree; Frequently, Often, Sometimes, Never.

Paired sample Two samples in which each member is paired with a

member in the other sample (e.g. comparing the output of two groups of assembly-line workers). The paired *t*- test is used to measure whether any differences on the random variable (e.g. output) are significant.

Paradigm A perspective or worldview based upon sets of values and

philosophical assumptions, from which distinctive concep- tualizations and explanations of phenomena are proposed.

Parameter The population value of a distribution such as the mean.

Parametric test Tests that assume that the data for a population are normally

distributed. Examples include *t*-tests and the *F*-test. To be used for interval and ratio numerical data, but not ordinal data.

Participant observation Qualitative research, when a researcher both collects data

and becomes involved in the site of the study.

Participatory action A research tradition in which people themselves act as research participants to investigate their own reality.

Pearson product A statistical formula for calculating the correlation moment coefficient between two variables. Assumes that both variables are interval and that the relationship between

them is linear.

Percentile A number that indicates the percentage of a distribution that

is above or below that number. A statement that a person scored on the 75th percentile indicates that 75 per cent of the others scored the same or below this.

Phenomenology The search for how participants experience and give mean-

ing to an event, concept or phenomenon.

Pilot survey A small-scale survey carried out before a large-scale one

to evaluate processes and research tools such as ques- tionnaires.

Plausibility An assessment of whether any truth claim is likely to be

true, given the present state of knowledge. Associated with postmodern critiques.

Population The totality of people, organizations, objects or occur-

rences from which a sample is drawn.

Positivism A philosophical assumption that the purpose of theory is

application and that the truth can be distinguished from untruth, and that the truth can be determined by either deduction or by empirical support.

Postal survey A survey in which survey instruments such as question-

naires are distributed by post.

Postmodernism A set of theories that argue that objective truth is unobtain-

able. All we have is ‘truth claims’ that are partial, partisan and incomplete.

Post-positivism Sometimes referred to as anti-positivism, a research tradi-

tion that rejects the belief that human behaviour can be investigated through the use of the methods of scientific inquiry.

Post-test A test that occurs after a treatment has been adminis- tered in an experimental study.

Predictive validity The extent to which scores on an instrument can predict

a subject’s future behaviour in relation to the test’s content (e.g. do scores on an engineering aptitude test predict the ability to perform engineering tasks?)

Pre-test A test that occurs before a treatment has been admini- stered in an experimental study.

Probability sampling Techniques used to ensure that a sample is represen-

tative of the population, so that findings can be gener- alized to that population.

Probe An interviewing technique in which the interviewer seeks clarification and elaboration of a respondent’s answers.

Proposition A formal statement that relates two or more concepts. Purposive sampling A non-probability sampling strategy in which partici-

pants are selected on the basis that they are consid-

ered to be typical of a wider population.

p-value The probability of obtaining the results of a statistical test by chance. It is calculated after the statistical test. If less than the alpha value () which is set before the test, then the null hypothesis is rejected.

Qualitative methods Techniques by which qualitative data are collected and

analysed.

Quantitative methods The systematic and mathematical techniques used to

collect and analyse quantitative data.

Quasi-experimental design Approach using elements of experimental design such

as the use of a control group, but without the ability to randomly select the sample.

Quota sampling A non-probability sampling strategy in which various

strata are identified by the researcher who ensures that these strata are proportionately represented within the sample to improve its representativeness.

Random sampling The method of drawing a proportion of a population

such that all *possible* samples have the same probability of being selected.

Range The difference between the largest observation and the smallest in a sample of a set of variables.

Rank The position of a member of a set in an order.

Ratio scales A measurement in which equal differences between

points correspond to equal differences on the scale. Used for characteristics where there is an absolute zero point that does have some meaning, that is, an absence

of the construct being measured (in contrast to interval scales where the zero is arbitrary) – for example, zero length on a ruler.

Reactivity The potential for the behaviour of research subjects to

change due to the presence of the researcher.

Realism A research philosophy that presumes that a knowable, objective reality exists.

Reflexivity The monitoring by a researcher of her or his impact on the

research situation being investigated. A stance associated with postmodernism and anti-realism.

Reliability The degree to which an instrument will produce similar

results at a different period.

Representative sample A sample in which individuals are included in proportion to

the number of those in the population who are like them.

Research design A strategic plan for a research project, setting out the broad

structures and features of the research.

Research methodology Approaches to systematic inquiry developed within a

particular paradigm with associated epistemological assumptions (e.g. experimental research, survey research, grounded theory, action research).

Research question A specific formulation of the issues that a research project

will address, often describing general relationships between and among variables that are to be tested.

Sample A set of objects, occurrences or individuals selected from a parent population for a research study.

Sampling bias Distortion occurring when a sample is not representative of

the population from which it has been drawn.

Sampling error The fluctuations in the value of a statistic from different

samples drawn from the same population.

Sampling frame A complete list of the people or entities in the entire popu-

lation to be addressed by a research study, from which a random sample will be drawn.

Secondary analysis A reworking of data that have already been analysed to

present interpretations, conclusions or knowledge addi- tional to, or different from, those originally presented.

Significance level The probability of rejecting a true null hypothesis. This should

be chosen before a test is performed and is called the alpha value (). Alpha values are usually kept small (0.05, 0.01 or 0.001), because it is important not to reject the null hypothesis when it is true (a Type I error), that is, there is no difference between the means of the groups being measured.

Skewed distribution An asymmetrical distribution, positively skewed meaning

the larger frequencies being concentrated towards the

lower end of the variable, and negatively skewed, towards the higher end.

Snowball sampling A non-probability sampling strategy through which the first

group of participants is used to nominate the next cohort of participants.

Spearman’s rank-order Used to describe the relationship between two ordinal correlation (Spearman’s characteristics or one ordinal and one ratio/interval rho) characteristic. Represented by the symbol rs.

Standard deviation A measure of the spread of data about the mean (average),

symbolized by the Greek letter sigma (, or the square root of the variance.

Statistical inference A procedure using the laws of probability to generalize the

findings from a sample to an entire population from which the sample was drawn.

Statistical significance *See* Significance level.

Stratified sampling Drawing a sample from a specified strataum – for example,

from a company’s rural, out-of-town and town centre stores.

Subjects A term most frequently used in positivist research to describe those who participate in a research study.

Survey An investigation into one or more variables in a population that may involve the collection of both qualitative and quan- titative data.

Symbolic interactionism A school of sociology in which people are seen as devel-

oping a sense of identity through their interactions and communication with others.

Theoretical sampling The selection of participants within a naturalistic inquiry,

based on emerging findings during the progress of the study to ensure that key variables are adequately represented.

Theoretical sensitivity Often used in grounded theory, involves maintaining an

awareness of the subtleties of meaning in data.

Thick description A detailed account of life ‘inside’ a field of study. Associated

with humanistic ethnography but rejected by postmodern ethnography as just selective or partial descriptions.

Time sampling An observational method in which data are collected at

periodic intervals.

Time series A set of measures on a single variable collected over time.

Traces An unobtrusive measure in which physical evidence is collected to provide evidence about social behaviour.

Triangulation The use of a variety of methods or data sources to exam-

ine a specific phenomenon either simultaneously or sequentially in order to improve the reliability of data.

*t*- test A test used on the means of small samples to measure whether the samples have both been drawn from the same parent population.

Two-tailed test The two areas of a normal distribution curve showing the

regions of rejection for the null hypothesis where the direc- tion predicted by the hypothesis is not known (hence the need for two tails).

Type I error An error that occurs when the null hypothesis is rejected

when it is true and a researcher concludes that a statisti- cally significant relationship exists when it does not.

Type II error An error that occurs when the null hypothesis is accepted

when it is false and a researcher concludes that no signif- icant relationship exists when it does.

Unit of analysis The set of objects (individuals, organizations or events) on which the research is focused.

Unobtrusive measures A non-reactive method of data collection using sources

such as archives, documents or the Web.

Validity The degree to which data in a research study are accurate and credible.

Variable A characteristic that is measurable, such as income, atti- tude, colour etc.

Variance The differences measured in repeated trials of a procedure. The standard deviation squared – a measure of dispersion.

Verification Drawing the implications from a set of empirical conclu-

sions to theory.

Vignette A data collection technique involving the posing of a hypothetical or real scenario to a respondent for their comments.

Wilcoxon rank–sum test A non-parametric test for comparing ordinal data from two

dependent samples or interval/ratio data that is not nor- mally distributed.

Wilcoxon test A non-parametric test for a difference between two samples

where the samples are non-normally distributed and the measurement scale on the dependent variable is ordinal.

**References**

Alford, R.R. (1998) *The Craft of Inquiry: Theory, Methods, Evidence.* New York: Oxford University Press.

American Psychological Association (1992) *American Psychological Association Ethical Principles of Psychologists and Code of Conduct*. Retrieved 23 November 2001 from [http://www.apa.org/ethics/code.html#materials.](http://www.apa.org/ethics/code.html#materials)

Arksey, H. and Knight, P. (1999) *Interviewing for Social Scientists.* London: Sage.

Atkinson, P. and Coffey, A. (1997) ‘Analysing documentary realities’, in D. Silverman (ed.),

*Qualitative Research: Theory, Methods and Practice.* London: Sage.

Avison, D., Baskerville, R. and Myers, M. (2001) ‘Controlling action research projects’,

*Information Technology and People*, 14(1): 28–45.

Badger, T.G. (2000) ‘Action research, change and methodological rigour’, *Journal of Nursing Management*, 8: 201–207.

Bailey, C.A. (1996) *A Guide to Field Research.* Thousand Oaks, CA: Pine Forge Press.

Bales, R.F. (1950) *Interaction Process Analysis: A Method for the Study of Small Groups.*

London: University of Chicago Press.

Ballantine, J., Levy, M., Martin, A., Munro, I. and Powell, P. (2000) ‘An ethical perspective on information systems evaluation’, *International Journal of Agile Management Systems*, 2/3: 233–41.

Beed, T.W. and Stimson, R.J. (1985) (eds) *Survey Interviewing: Theory and Techniques.* North Sydney: George Allen & Unwin.

Begley, C.M. (1996) ‘Using triangulation in nursing research’, *Journal of Advanced Nursing*, 24: 122–8.

Berg, B.L. (1995) *Qualitative Research Methods for the Social Sciences*, 2nd edn. Needham Heights, MA: Allyn & Bacon.

Berry, R. (1994) *The Research Project: How To Write It*, 3rd edn. London: Routledge. Black, T.R. (1993) *Evaluating Social Science Research.* London: Sage.

Black, T.R. (1999) *Doing Quantitative Research.* London: Sage.

Boote, J. and Mathews, A. (1999) ‘ “Saying is one thing: doing is another”: the role of observa- tion in marketing research’, *Qualitative Market Research: An International Journal*, 2(1): 15–21.

Booth, P.F. (1991) *Report Writing*, 2nd edn. Huntingdon: Elm Publications.

Bramley, P. and Kitson, B. (1994) ‘Evaluating training against business criteria’, *Journal of European Industrial Training*, 18 (1): 10–14.

Brewer, J.D. (2000) *Ethnography.* Buckingham, Philadelphia: Open University Press. Bryman, A. (1988) *Quantity and Quality in Social Research.* London: Routledge.

Burgess, R.G. (1984) *In the Field: An Introduction to Field Research.* London: Routledge.

Campbell, C.P. (1997) ‘Training course/program evaluation: principles and practice’, *Journal of European Industrial Training*, 22(8): 323–44.

Campbell, D.T. and Stanley, J.C. (1963) *Experimental and Quasi-experimental Designs for Research.* Chicago, IL: Rand McNally.

Cannell, C.F. (1985) ‘Overview: response bias and interviewer variability in surveys’, in T.W. Beed and R.J. Stimson (eds), *Survey Interviewing: Theory and Techniques.* North Sydney: George Allen & Unwin.

Carrigan, M. and Kirkup, M. (2001) ‘The ethical responsibility of marketers in retail observa- tional research: protecting stakeholders through the ethical “research covenant”’, *International Review of Retail, Distribution and Consumer Research*, 11(4): 415–35.

Carroll, S. (1994) ‘Questionnaire design affects response rate’, *Marketing News*, 28(12): 25–7. Charmaz, K. (1995) ‘Grounded theory’, in J.A. Smith, R. Harré and L.V. Langenhove (eds),

*Rethinking Methods in Psychology.* London: Sage.

Chia, R. (2002) ‘The Production of Management Knowledge: Philosophical Underpinnings of Research Design’, in D. Partington (ed.), *Essential Skills for Management Research.* London: Sage.

Clarke, A. (1999) *Evaluation Research: An Introduction to Principles, Methods and Practice.*

London: Sage.

Coghlan, D. (2001) ‘Insider Action Research Projects: Implications for Practising Managers’

*Management Learning*, 32(1): 49–60.

Coghlan, D. and Brannick, T. (2001) *Doing Action Research in Your Own Organization.* London: Sage.

Cohen, L. and Manion, L. (1997) *Research Methods in Education*, 4th edn. London: Routledge. Copas, A.J. and Farewell, V.T. (1998) ‘Dealing with non-ignorable non-response by using an “enthusiasm-to-respond” variable’, *Journal of the Royal Statistical Society*, 161(3):

385–96.

Cressey, P. (1932) *The Taxi-Dance Hall*. Chicago, IL: University of Chicago Press.

Creswell, J.W. (1994) *Research Design: Qualitative and Quantitative Approaches.* Thousand Oaks, CA: Sage.

Crotty, M. (1998) *The Foundation of Social Research: Meaning and Perspectives in the Research Process.* London: Sage.

Czaja, R. and Blair, J. (1996) *Designing Surveys: A Guide to Decisions and Procedures.*

Thousand Oaks, CA: Sage.

Davenport, T.H. and Prusak, L. (2000) *Working Knowledge: How Organizations Manage What They Know.* Boston, MA: Harvard Business School Press.

Davies, D. and Dodd, J. (2002) ‘Qualitative research and the question of rigor’, *Qualitative Health Research*, 12(2): 279–89.

Davies, S. (2001) ‘New Techniqes and Technologies of Surveillance in the Workplace’, Computer Security Research Centre, The London School of Economics. Retrieved 17 November from [www.msf-itpa.org.uk/juneconf3.shtml.](http://www.msf-itpa.org.uk/juneconf3.shtml)

De Laine, M. (2000) *Fieldwork, Participation and Practice.* London: Sage.

Delanty, G. (1997) *Social Science: Beyond Constructivism and Realism.* Buckingham: Open University Press.

Denzin, N.K. (1978) *The Research Act.* New York: McGraw-Hill. Denzin, N.K. (1989) *Sociological Methods.* New York: McGraw-Hill.

De Vaus, D.A. (1986) *Surveys in Social Research.* London: George Allen & Unwin.

De Vaus, D.A. (2002) *Surveys in Social Research*, 5th edn. London: George Allen & Unwin. Dey, I. (1993) *Qualitative Data Analysis.* London: Routledge.

Dey, I. (1999) *Grounding Grounded Theory: Guidelines for Qualitative Inquiry.* London: Academic Press.

Dewey, J. (1933) *How We Think.* London: D.C. Heath & Co.

Diamantopoulos, A. and Schlegelmilch, B.B. (1997) *Taking the Fear out of Data Analysis.*

London: Harcourt Brace.

Dickens, L. and Watkins, K. (1999) ‘Action Research: Rethinking Lewin’, *Management Learning*, 30(2): 127–40.

Diener, E. and Crandall, R. (1978) *Ethics in Social and Behavioural Research.* Chicago, IL: University of Chicago Press.

Dillman, D.A. (2000) *Mail and Internet Surveys: The Tailored Design Method*, 2nd edn. Chichester: John Wiley.

Dochartaigh, N. (ed.) (2002) *The Internet Research Handbook: A Practical Guide for Students and Researchers in the Social Sciences.* London: Sage.

Douglas, J.D. (1976) *Investigative Social Research: Individual and Team Field Research.* Beverly Hills, CA: Sage.

Easterby-Smith, M. (1994) *Evaluations, Management Development, Training and Education.*

Aldershot: Gower.

Easterby-Smith, M., Thorpe, R. and Lowe, A. (1991) *Management Research: An Introduction.*

London: Sage.

Elger, A. and Smith, C. (1998) ‘Exit, voice and “mandate”: management strategies and labour practices of Japanese firms in Britain’, *British Journal of Industrial Relations*, 36(2): 185–207.

Ellen, R.F (ed.) (1984) *Ethnographic Research: A Guide to General Conduct.* London: Academic Press.

Featherstone, M. (2000) ‘Archiving cultures’, *British Journal of Sociology*, 51(1): 161–84. Ferguson, S.D. (2000) *Researching the Public Opinion Environment: Theories and Methods.*

Thousand Oaks, CA: Sage.

Fetterman, D.M. (1989) *Ethnography Step by Step.* Newbury Park, CA: Sage. Fielding, J. and Gilbert, N. (2000) *Understanding Social Statistics.* London: Sage.

Fielding, N. and Lee, R.M. (1998) *Computer Analysis and Qualitative Research.* London: Sage. Fink, A. (1995a) *How to Sample in Surveys.* Thousand Oaks, CA: Sage.

Fink, A. (1995b) *The Survey Handbook.* Thousand Oaks, CA: Sage. Fink (1995c) *How to Analyze Survey Data.* Thousand Oaks, CA: Sage.

Flanders, N.A. (1970) *Analyzing Teaching Behaviour.* London: Addison–Wesley. Flick, U. (1998) *An Introduction to Qualitative Research.* London: Sage.

Foddy, W. (1993) *Constructing Questions for Interviews and Questionnares: Theories and Practice in Social Research.* Cambridge: Cambridge University Press.

Friedman, V.J. (2001) ‘Action Science: creating communities of inquiry in communities of prac- tice’, in P. Reason and H. Bradbury (eds), *Handbook of Action Research: Participative Inquiry and Practice*. London: Sage.

Gans, H.J. (1999) ‘Participant observation in the era of “ethnography”, *Journal of Contemporary Ethnography*, 28(5): 540–8.

Gaventa, J. and Cornwall, A. (2001) ‘Power and Knowledge’, in P. Reason and H. Bradbury (eds),

*Handbook of Action Research: Participative Inquiry and Practice.* London: Sage.

Gill, J. and Johnson, P. (1997) *Research Methods for Managers*, 2nd edn. London: Paul Chapman.

Gillham, B. (2000) *Developing a Questionnaire.* London: Continuum.

Glaser, B.G. (1992) *Basics of Grounded Theory Analysis.* Mill Valley, CA: Sociology Press. Glaser, B.G. and Strauss, A. (1967) *The Discovery of Grounded Theory: Strategies for*

*Qualitative Research.* Chicago, IL: Aldine.

Gomm, R., Hammersley, M. and Foster, P. (2000) ‘Case Study and Generalisation’, in R. Gomm,

M. Hammersley and P. Foster (eds), *Case Study Method: Key Issues, Key Texts.* London: Sage.

Gray, D., Griffin, C. and Nasta, T. (2000) *Training to Teach in Further and Adult Education.*

Cheltenham: Stanley Thornes.

Grønhaug, K. and Olson, O. (1999) ‘Action research and knowledge creation: merits and chal- lenges’, *Qualitative Market Research: An International Journal*, 2(1): 6–14.

Guba, E.G. (1985) ‘The content of emergent paradigm research’, in Y.S. Lincoln (ed.),

*Organizational Theory and Inquiry.* Newbury Park, CA: Sage.

Gummesson, E. (2000) *Qualitative Methods in Management Research*. Thousand Oaks, CA: Sage.

Habermas, J. (1972) *Knowledge and Human Interests.* London: Heinemann.

Hakim, C. (1993) ‘Research analysis of administrative records’, in M. Hammersley (ed.), *Social Research: Philosophy, Politics and Practice.* London: Sage.

Hakim, C. (2000) *Research Design: Successful Designs for Social and Economic Research*, 2nd edn. London: Routledge.

Hall, T. (2000) ‘At home with the young homeless’, *International Journal of Social Research Methodology*, 3(2): 121–33.

Hall, W.A. and Callery, P. (2001) ‘Enhancing the rigor of grounded theory: incorporating reflex- ivity and relationality’, *Qualitative Health Research*, 11(2): 257–72.

Halpenny, F.G. (1976) ‘The thesis and the book’, in E. Harman and I. Montagnes (eds), *The Thesis and the Book.* Toronto: University of Toronto Press.

Hammersley, M. (1992) *What’s Wrong with Ethnography?* London: Routledge.

Hampshire, A.J. (2000) ‘What is action research and can it promote change in primary care?’,

*Journal of Evaluation in Clinical Practice*, 6(4): 337–43.

Hancock, D.R. and Flowers, C.P. (2001) ‘Comparing social desirability responding on World Wide Web and paper-administered surveys’, *Educational Technology Research and Development*, 49(1): 5–13.

Hart, C. (1998) *Doing a Literature Review.* London: Sage. Hart, C. (2001) *Doing a Literature Search.* London: Sage.

Hartley, J. (2001) ‘Employee surveys: strategic aid or hand-grenade for organisational and cul- tural change?’, *The International Journal of Public Sector Management*, 14(3): 184–204.

Have, P.T. (1999) *Doing Conversational Analysis: A Practical Guide.* London: Sage.

Hedrick, T.E., Bickman, L. and Rog, D.J. (1993) *Applied Research Design: A Practical Guide.*

Newbury Park, CA: Sage.

Heron, J. and Reason, P. (2001) ‘The practice of co-operative inquiry: research “with” rather than “on” people’, in P. Reason and H. Bradbury (eds), *Handbook of Action Research: Participative Inquiry and Practice.* London: Sage.

Herrera, C.D. (1999) ‘Two arguments for “covert methods” in social research’, *British Journal of Sociology*, 50(2): 331–43.

Herbert, M. (1990) *Planning a Research Project: A Guide for Practitioners and Trainees in the Helping Professions.* London: Cassell Educational.

Hosker, I. (2002) *Social Statistics: Data Analysis in Social Science Explained.* Taunton: Studymates.

House, E.R. (1980) *Evaluating with Validity.* Beverly Hills, CA: Sage.

Hughes, J. and Sharrock, W. (1997) *The Philosophy of Social Research.* London: Addison Wesley Longman.

Hutchby, I. and Wooffitt, R. (1998) *Conversational Analysis: Principles, Practices and Applications.* Cambridge: Polity Press.

Jankowicz, A.D. (1991) *Business Research Projects for Students.* London: Chapman & Hall. Jarvis, P. (1995) *Adult and Continuing Education: Theory and Practice.* London: Routledge. Jobber, D. and O’Reilly, D. (1996) ‘Industrial mail surveys: techniques for inducing response’,

*Marketing and Intelligence*, 14(1): 29–34.

Johnson, P. and Harris, D. (2002) ‘Qualitative and quantitative issues in research design’, in

D. Partington (ed.), *Essential Skills for Management Research.* London: Sage.

Keats, D.M. (2000) *Interviewing: A Practical Guide for Students and Professionals.*

Buckingham: Open University Press.

Kelly, G.A. (1955) *The Psychology of Personal Constructs.* New York: Norton.

Kenyon, E. and Hawker, S. (1999) ‘“Once would be enough”: some reflections on the issue of safety for lone researchers’, *International Journal of Social Research Methodology*, 2(4): 313–27.

Keppel, G., Saufley, W.H. and Tokunaga, H. (1992) *Introduction to Design and Analysis*, 2nd edn. New York: W.H. Freeman and Company.

Kerlinger, F.N. (1986) *Foundations of Behavioural Research*, 3rd edn. Orlando, FL: Holt, Rinehart and Winston.

Kettner, M. (1993) ‘Scientific knowledge, discourse ethics and consensus formation in the pub- lic domain’, in E. Winkler and J. Coombs (eds) *Applied Ethics.* Oxford: Blackwell.

Kidder, L.H. (1981) ‘Qualitative research and quasi-experimental frameworks’, in M.B. Brewer and B.E. Collins (eds), *Scientific Inquiry and the Social Sciences.* San Fransisco, CA: Jossey- Bass.

Kirkpatrick, D.L. (1959) ‘Techniques for evaluating training programmes’, *Journal of the American Society of Training Directors*, 13(3–9): 21–6.

Kirkup, M. and Carrigan, M. (2000) ‘Video surveillance research in retailing; ethical issues’,

*International Joural of Retail and Distribution Management*, 28(11): 470–80.

Korac-Kakabadse, N., Kakabadse, A. and Kouzmin, A. (2002) ‘Ethical considerations in man- agement research: a “truth” seeker’s guide’, in D. Partington (ed.), *Essential Skills for Management Research.* London: Sage.

Kuhn, T.S. (1970) *The Structure of Scientific Revolutions*, 2nd edn. Chicago, IL: University of Chicago Press.

Lee, R.M. (2000) *Unobtrusive Measures in Social Research.* Buckingham: Open University Press.

Lewin, K. (1946) ‘Action research and minority problems’, *Journal of Social Issues*, 2(4): 34–6. Lieberson, S. (2000) ‘Small N’s and big conclusions: an examination of the reasoning in com- parative studies based on a small number of cases’, in R. Gomm, M. Hammersley, and

P. Foster (eds), *Case Study Method: Key Issues, Key Texts.* London: Sage.

Lincoln, Y.S. (1985) ‘The substance of the emergent paradigms: implications for researchers’, in Y.S. Lincoln (ed.), *Organizational Theory and Inquiry.* Newbury Park, CA: Sage.

Lincoln, Y.S. (2001) ‘Engaging sympathies: relationships between action research and social constructivism’, in P. Reason and H. Bradbury (eds), *Handbook of Action Research: Participative Inquiry and Practice.* London: Sage.

Lincoln, Y.S. and Guba, E.G. (1985) *Naturalistic Inquiry.* Newbury Park, CA: Sage.

Lincoln, Y.S. and Guba, E.G. (2000) ‘The only generalisation is: there is no generalisation’, in

R. Gomm, M. Hammersley and P. Foster (eds), *Case Study Method: Key Issues, Key Texts.*

London: Sage.

Locke, K. (2001) *Grounded Theory in Management Research.* London: Sage.

Lofland, J. and Lofland, L.H. (1984) *Analyzing Social Situations*, 2nd edn. Belmont, CA: Wadsworth. Mailbase (2002) *Copyright of email messages.* Retrieved 28 June 2002 from [http://www.](http://www/)

mailbase.ac.uk/docs/copyright.html.

Mangione, T.W. (1995) *Mail Surveys: Improving the Quality.* Thousand Oaks, CA: Sage. Market Research Society *Code of Conduct.* Retrieved 3 May 2002 from [http://www.mrs.org.uk/.](http://www.mrs.org.uk/) Mayring, P. (1983) Qualitative Inhaltsanclyse. Grundlagen and Techniken, 7th edn Weinheim:

Deutscher Studien Verlag.

McBurney, D.H. (1998) *Research Methods*, 4th edn. Pacific Grove, CA: Brookes/Cole.

McKay, J. and Marshall, P. (2001) ‘The dual imperatives of action research’, *Information Technology and People*, 14(1): 46–59.

McNiff, J. (1988) *Action Research: Principles and Practice.* London: Routledge.

McNiff, J., Lomax, P. and Whitehead, J. (1996) *You and Your Action Research Project.* London: Routledge.

McTaggart, R. (1997) ‘Guiding principles for partipatory action research’, in R. McTaggart (ed.),

*Participatory Action Research.* Albany, NY: State University of New York Press.

Merriam, S.B., Johnson-Bailey, J., Lee, M., Ntseane, G. and Muhamad, M. (2001) ‘Power and positionality: negotiating insider/outsider status within and across cultures’, *International Journal of Lifelong Education*, 20(5): 405–16.

Meyer, P. (2000) ‘Could net polling hasten demise of phone surveys?’, *USA Today*, 31 October. Miles, M.B. and Huberman, A.M. (1994) *Qualitative Data Analysis*, 2nd edn. Thousand Oaks, CA:

Sage.

Morris, L.L., Fitz-Gibbon, C.T. and Freeman, M.E. (1987) *How to Communicate Evaluation Findings.* Newbury Park, CA: Sage.

Motulsky, H. (1995) *Intuitive Biostatistics*. Oxford University Press. Retrieved 4 January, 2001 from [http://www.graphpad.com/www/book/Choose.htm.](http://www.graphpad.com/www/book/Choose.htm)

Moustakas, C. (1990) *Heuristic Research: Design, Methodology, and Applications.* Newbury Park, CA: Sage.

Mumford, E. (2001) ‘Advice for an action researcher’, *Information Technology and People*, 14(1): 12–27.

Murray, D.M. (1994) ‘Write research to be read’, in M. Langenbach, C. Vaugn, and L. Aagaard (eds), *An Introduction to Educational Research.* Needham Heights, MA: Allyn and Bacon.

Musson, G. (1998) ‘Life histories’, in G. Symon and C. Cassell (eds), *Qualitative Methods and Analysis in Organisational Research.* London: Sage.

Oakley, A. (1999) ‘Paradigm wars: some thoughts on a personal and public trajectory’,

*International Journal of Social Research Methodology*, 2(3): 247–54.

Oppenheim, A.N. (1992) *Questionnaire Design, Interviewing and Attitude Measurement.*

London: Pinter.

Park, P. (2001) ‘Knowledge and participatory research’, in P. Reason and H. Bradbury (eds),

*Handbook of Action Research: Participative Inquiry and Practice.* London: Sage.

Partington, D. (2002) ‘Grounded theory’, in D. Partington (ed.), *Essential Skills for Management Research.* London: Sage.

Patton, M.Q. (1984) ‘Data collection: options, strategies and cautions’, in L. Rutman (ed.),

*Evaluation Research Methods: A Basic Guide*, 2nd edn*.* Newbury Park, CA: Sage.

Patton, M.Q. (1990) *Qualitative Evaluation and Research Methods*, 2nd edn. Newbury Park, CA: Sage.

Peräkylä, A. (1997) ‘Reliability and validity in research based on tapes and transcripts’, in

D. Silverman (ed.), *Qualitative Research: Theory, Methods and Practice.* London: Sage. Perry, C. (1998) ‘Processes of a case study methodology for postgraduate research marketing’,

*European Journal of Marketing*, 32(9/10): 785–802.

Phillips, E.M. and Pugh, D.S. (1994) *How to get a PhD: A Handbook for Students and Their Supervisors*, 2nd edn. Buckingham: Open University Press.

Pink, S. (2001) *Doing Visual Ethnography.* London: Sage.

Popper, K.R. (1968) *The Logic of Scientific Discovery*, 2nd edn. London: Hutchinson.

Punch, K.F. (1998) *Introduction to Social Research: Quantitative and Qualitative Approaches.*

London: Sage.

Punch, S. (2002) ‘Interviewing strategies with young people: the “Secret Box”, stimulus mate- rial and task-based activities’, *Children and Society*, 16: 45–56.

QAA (Quality Assurance Agency for Higher Education) (2000) *Code of Practice for the Assurance of Academic Quality and Standards in Higher Education, Section 7: Programme Approval, Monitoring and Review.* Gloucester: QAAHE.

Raimond, P. (1993) *Management Project: Design, Research and Presentation.* London: Chapman & Hall.

Reason, P. and Bradbury, H. (2001) (eds) *Handbook of Action Research: Participative Inquiry and Practice.* London: Sage.

Reay, D.G. (1994) *Evaluating Training.* London: Kogan Page.

Reinharz, S. (1992) *Feminist Methods in Social Research.* New York: Oxford University Press. Robson, C. (1993) *Real World Research.* Oxford: Blackwell.

Rowe, C. (1995) ‘Incorporating competence into the long-term evaluation of training develop- ment’, *Industrial and Commercial Training*, 27(2): 3–9.

Rudestam, K.E. and Newton, R.R. (1992) *Surviving your Dissertation: A Comprehensive Guide to Content and Process.* Newbury Park, CA. Sage.

Samra-Fredericks, D. (1998) ‘Conversational analysis’, in G. Symon and C. Cassell (eds),

*Qualitative Methods and Analysis in Organisational Research.* London: Sage. Sapsford, R. (1999) *Survey Research.* London: Sage.

Saunders, M., Lewis, P. and Thornhill, A. (2000) *Research Methods for Business Students*, 2nd edn. London: Prentice-Hall.

Scheurich, J.J. (1997) *Research Methods in the Postmodern.* London: Falmer.

Schofield, J.W. (2000) ‘Increasing the generalisability of qualitative research’, in R. Gomm,

M. Hammersley and P. Foster (eds), *Case Study Method: Key Issues, Key Texts.* London: Sage. Schratz, M. (1996) ‘Collaborative, self-critical and reciprocal inquiry through memory work’, in

O. Zuber-Skerritt (ed.), *New Directions in Action Research.* London: Falmer Press.

Scriven, M. (1967) ‘The methodology of evaluation’, in R.W. Tyler, R.M. Gagne and M. Scriven (eds), *Perspectives of Curriculum Evaluation.* Chicago, IL: Rand McNally.

Scriven, M. (1973) ‘Goal free evaluation’, in E.R. House (ed.), *School Evaluation.* Berkeley, CA: McCutchan.

Sekaran, U. (1992) *Research Methods for Business*, 2nd edn. New York: John Wiley. Sixsmith, J. and Murray, C.D. (2001) ‘Ethical issues in the documentary data analysis of inter-

net posts and archives’, *Qualitative Health Research*, 11(3): 423–32.

Skrtic, T.M. (1985) ‘Doing naturalistic research into educational organizations’, in Y.S. Lincoln (ed.), *Organizational Theory and Inquiry.* Newbury Park, CA: Sage.

Slack, F. and Rowley, J. (2001) ‘Observation: perspectives on research methodologies for leisure managers’, *Management Research News*, 24(1/2): 35–42.

Sleeman, P. (2002) ‘Archives and statistics’, in N. Dochartaigh (ed.), *The Internet Research Handbook: A Practical Guide for Students and Researchers in the Social Sciences.* London: Sage. Stake, R.E. (2000) ‘The case study method in social inquiry’, in R. Gomm, M. Hammersley and

P. Foster, (eds), *Case Study Method: Key Issues, Key Texts.* London: Sage.

Strauss, A.L. (1987) *Qualitative Analysis for Social Scientist.* New York: Cambridge University Press.

Strauss, A.L. and Corbin, J. (1994) ‘Grounded theory methodology: an overview’, in N.K. Denzin and Y.S. Lincoln (eds), *Handbook of Qualitative Research.* London: Sage.

Strauss, A.L. and Corbin, J. (1998) *Basics of Qualitative Research*, 2nd edn. Thousand Oaks, CA: Sage.

Stringer, E.T. (1999) *Action Research*, 2nd edn. Thousand Oaks, CA: Sage.

Symon, G. and Cassell, C. (eds) (1998) *Qualitative Methods and Analysis in Organisational Research.* London: Sage.

Teitelbaum, H. (1998) *How to Write a Thesis*, 4th edn. New York: Macmillan General Reference. Tesch, R. (1991) ‘Software for qualitative researchers: analysis needs and program capabilities’

in N. Fielding and R.M. Lee (eds), *Using Computers in Qualitative Research.* London: Sage. Tesch, R. (1994) ‘The contribution of a qualitataive method: phenomenological research’, in

M. Langenbach, C. Vaugn and L. Aagaard (eds), *An Introduction to Educational Research*. Needham Heights, MA: Allyn and Bacon.

Tickle, L. (2001) ‘Opening windows, closing doors: ethical dilemmas in educational action research’, *Journal of Philosophy of Education*, 35(3): 345–59.

Travers, M. (2001) *Qualitative Research Through Case Studies.* London: Sage.

Turk, C. and Kirkman, J. (1989) *Effective Writing: Improving Scientific, Technical and Business Communication*, 2nd edn. London: E.&F.N. Spon.

Vazquez-Montilla, E., Reyes-Blanes, M.E., Hyun, E. and Brovelli, E. (2000) ‘Practices for cultur- ally responsive interviews and research with Hispanic families’, *Multicultural Perspective*, 2(3): 3–7.

Vinten, G. (1994) ‘Participant observation: a model for organizational investigation?’, *Journal of Managerial Psychology*, 9(2): 30–8.

Wainwright, G. (1990) *Report Writing*, 2nd edn. Shrewsbury: Management Update.

Warr, P., Bird, M. and Rackman, N. (1970) *Evaluation of Management Training.* Aldershot: Gower.

Waterman, H. (1998) ‘Embracing ambiguities and valuing ourselves: issues of validity in action research’, *Journal of Advanced Nursing*, 28(1): 101–5.

Waterson, J. (2000) ‘Balancing research and action: reflections on an action research project in a social services department’, *Social Policy and Administration*, 34(4): 494–508.

Webb, E.J., Campbell, D.T., Schwartz, R.D. and Sechrest, L. (1966) *Unobtrusive Measures: Nonreactive Research in the Social Sciences.* Chicago, IL: Rand McNally.

Weiss, C.H. (1984) ‘Increasing the likelihood of influencing decisions’, in L. Rutman (ed.),

*Evaluation Research Methods: A Basic Guide*, 2nd edn*.* Newbury Park, CA: Sage.

Wengraf, T. (2001) *Qualitative Research Interviewing: Biographic Narrative and Semi- Structured Methods.* London: Sage.

White, J.H. (1997) *Creating Effective Technical Documents.* New York: ASME Press. Whittemore, R., Chase, S.K. and Mandle, C.L. (2001) ‘Validity in qualitative research’, *Qualitative*

*Health Research*, 11(4): 522–37.

Whyte, W.F. (1991) (ed.) *Participatory Action Research.* Newbury Park, CA: Sage.

Whyte, W.F. (1991) ‘Compring PAR and Action Science’, in W.F. Whyte (ed.), *Participatory Action Research.* Newbury Park, CA: Sage.

Wield, D. (2002) ‘Planning and organising a research project’, in S. Potter (ed.), *Doing Postgraduate Research.* London: Sage.

Williams, D. (1996) ‘Research proposals’, in T. Greenfield, (ed.), *Research Methods: Guidance for Postgraduates.* London: Arnold.

Williams, M. and May, T. (1996) *Introduction to the Philosophy of Social Research.* London: Routledge.

Wilson, K. and Roe, B. (1998) ‘Interviewing older people by telephone following initial contact by postal survey’, *Journal of Advanced Nursing*, 27: 575–81.

Winkler, A.C. and McCuen, J.R. (1985) *Writing the Research Paper: A Handbook*, 2nd edn. New York: Harcourt Brace Jovanovich.

Winkler, E. and Coombs, J. (eds) *Applied Ethics*. Oxford: Blackwell.

Winter, R. (1996) ‘Some principles and procedures for the conduct of action research’, in

O. Zuber-Skerritt (ed.), *New Directions in Action Research.* London: Falmer Press.

Wolcott, H.F. (1994) *Transforming Qualitative Data: Description, Analysis and Interpretation.*

Thousand Oaks, CA: Sage.

Yin, R.K. (1993) *Applications of Case Study Research.* Thousand Oaks, CA: Sage.

Yin, R.K. (1994) *Case Study Research: Design and Methods*, 2nd edn. Thousand Oaks, CA: Sage.

**Index**

abstract 354, 358, 362

abstracting services 49, 51

academic proposals 55, 58–9

access 37, 388

accreditation 162–3

accretion measures 264–6

accumulated records 166–7

acknowledgements 357, 358

action research 2, 10, 26–7, 31,

243, 373–93

evaluation 164

grounded theory 340

limitations 390–1

action science 375–6

action warrants 380

active listening 225–6

actuarial records 268–9 administration

evaluation 156–7

questionnaires 208–11

Amazon website 48 American Psychological

Association website 60 analytical categories

sampling 166

analytical surveys 27–8, 98–122

anonymity 119, 188, 276–7

appendices 355, 357, 358

archives 51, 124, 263

case studies 135

digital 271–5

artefacts 135

assessment tests 167

assumptive questions 190

attitude surveys 119 audience

case studies 143–4

evaluation 175, 176

observation 258

report writing 350–1

surveys 113–14

authorship 277–8

autonomous evaluation constraint 178, 179

axial coding 330, 333–6

bar charts 294, 297

benchmarking 105, 112, 115

bias 116

interviews 219–20

missing data 292

observation 242

questionnaires 109, 188

structured interviews 111

surveys 106

unobtrusive measures 267 bibliographies

maintaining 46–7

services 49 books

reviews 51

source materials 48–9

brainstorming 41–2

British Educational Research Association website 60

British Library website 49 British Sociological Association

website 259

BUBL website 48, 50

Cambridge Scientific Abstracts website 50

career goals 40

case studies 9

designing 123–51

evaluation 152

grounded theory 340

selection criteria 125

Catchword website 50

category questions 196

causality 76, 78

census 99–100

Central Office for Research Ethics Committees website 60

central tendency 298–300

chi-square statistic 307–8,

312–13

chronological structure 146

chronologies 143

citations 51

classification questions 191 closed circuit television (CCTV)

274–5, 278, 279, 281

closed questions 195, 198

cluster sampling 87 codes of conduct 279–80

coding 195, 290–2, 320–1

frames 195

grounded theory 330–6

schedules 248–50

surveys 107

comparative structure 145–6

conceptual frameworks 322

conclusions 356–7

conditional matrix 330

conference papers 48

confidence intervals 85

confidence level 85 confidentiality

action research 389

covert observation 240

non-response 119

surveys 114, 120 consent

forms 234, 252

informed 59–60, 120,

251–2, 275

technology 275–6

consistency 219, 221

construct validity 91–2,

129, 135–6

constructivism 17, 20, 159–60

content analysis 327–9

content validity 92

contents page 354, 358

context evaluation 156

contingency costs 57

control groups 78, 79–81, 85 controlled accretion measures

265–6

controlled erosion measures 266–7

convenience sampling 88

conversational analysis 341, 345

cooperative inquiry 376

copyright 277, 364–5

corporate reports 115

correlation analysis 314 correlative research questions

70, 71

cost-benefit analysis 154 costs

interviews 111

project proposals 57, 58

questionnaires 108, 188

surveys 106

covers 354

covert observation 165–6, 172,

239–41, 258–60

Cramer’s V 312–13

credibility 218, 345, 388

criterion validity 91

critical incidents 170–1

critical inquiry 23–4

cross-case conclusions 130

cross-sectional studies 31, 33, 82 culture

actuarial records 268–9 multicultural interviews

228–30

data

categorization 286–9

cleaning 290

collection error 117–18

degradation 293

entry 289–90

layout 290–2

matrix 290–1

reduction 321

transcription 227–8, 330

data analysis 4, 9–10, 68

case studies 138–43

qualitative data 319–47

quantitative data 285–318

staff surveys 114

surveys 107

data collection 4, 30, 31

action research 380–1, 384–7

case studies 134–5

evaluation 165–71

data collection *cont.*

interviews 213–37

observation 238–62

qualitative data 319–47

questionnaires 187–212

surveys 107

unobtrusive measures 263–82

databases, case studies 130, 138 decision making evaluation

159, 162

deduction 6–8, 19, 31, 52, 67,

124, 126–7

delivery and collection questionnaires 109, 209–10

dependent variables 68, 74–5,

76, 78–9

case studies 139

surveys 102

variance 116

descriptive framework 139 descriptive research questions

70, 71

descriptive statistics 68, 75,

293–301

descriptive studies 32

descriptive surveys 98–122 design

case studies 123–51

evaluations 152–83

experimental 76–82

interviews 218–21

qualitative research 321–4

questionnaires 189–204

surveys 98–122

determinism 137

developmental designs 82

diaries 384–5

direct observation 135

discourse analysis 341–2

discussion 356, 359, 363

dispersion measurement 300

dissertations 144, 358–9

documents 135, 267–71

double questions 190

Ebsco website 50

e-journals 50 e-mail

covert observation 239

discussion groups 110,

275, 276, 277

ethics 275–6, 277

questionnaires 109, 202–4, 210

*see also* Internet

embedded case studies 132, 133–4

employee surveys 100

episodic records 269–71

epistemology 16, 17, 31

equivalence 93

erosion measures 266–7 error

collection 117–18

interviewer 119–20

reduction 116–20

sampling 116–17, 302

Type I/II 302–3, 304

ethical contracts 280–1

ethical frameworks 278–9

ethics 43, 58–62

action research 388–90

ethnography 258

evaluation 178–81

interviews 235–6

observation 258–60

quasi-experiments 77

report writing 363–5

survey design 120

technology 275–81

ethnography 21–2, 239, 241–2

ethics 258

gender 253

grounded theory 340

public concern 256 European Commission

website 51

European Society for Opinion and Market Research 280

evaluations 9

design 152–83

questionnaires 205

types 158–9

experimental evaluation 159,

160–1, 174

experimental research 25–6,

67–97

experiments, selection criteria 125 explanation building 141–2

explanatory studies 32

exploratory studies 32 external action research 375 external validity 90, 91, 134,

136–8, 219, 256, 343

extraneous variables 74–5,

80, 103

face validity 172

factorial designs 82

feedback, project proposals 58 feminism 24

field notes 244–8, 320–1, 324–6

filter questions 194 Flanders interaction analysis

248–50

Flash Reports 115

Flesch index 366

focus groups 111, 230–1

focused interviews 217, 218

force-field analysis 155–6

formative evaluation 157–9, 174

frequency distribution 298–9

frequency polygons 294, 295,

296, 298

Gantt charts 44, 45, 57

generality constraint 178, 179

generalization 5, 31, 82–90

action research 388, 391

analytical 127–8

case studies 125, 127–8,

136–8

observation 256

personal records 270

goal-based evaluation 159,

162, 172

goal-free evaluation 159, 164

government statistics 51 graphics, project proposals 56–7 graphs 293–6

grey literature 50, 67

grounded theory 329–40, 344

group interviews 230–1

Heraclitean ontology 16–17

hermeneutics 23

heuristic inquiry 29

histograms 294, 295, 296

holistic case studies 131–2, 133

human resources 56 hypotheses

accept/reject 75

case studies 127

development 69, 72–3

surveys 103

testing 6, 301–6

hypothetical questions 190, 193

illuminative evaluation 159, 163–4

impact analysis 155, 381–2

impact research questions 70, 71

imprecise questions 190

impression management 223

improvisation 225

incentives, response rate 118–19 incident sampling 166

independent variables 68, 74–5,

76, 78–80

surveys 102

variance 116

indexes 49–50

induction 6–8, 31, 52, 124,

126–7, 321

industrial records 270

inferential statistics 68, 75,

301–18

informal conversational interviews 217–18

informants, evaluation 165

informed consent 59–60, 120,

251–2, 275

Ingenta journals website 50 insider action research 375 Institute of Management

Consultants website 60 Institute for Scientific

Information website 51

institutional investigations 271

institutional records 270

intellectual property 364

inter-judge reliability 93–4

inter-quartile range 300

internal consistency 93

internal validity 76, 79, 90,

91, 136, 255–6

Internet

archives 272–3

ethics 275–8

questionnaires 107, 109–10,

202–4, 206, 210

records 263

*see also* Web interpretivism 17, 20–3, 31

interval data 286–9, 293–5,

296–7

intervening variables 74

interventionist evaluation 164 interview-administered

questionnaires 111–12,

210–11

interviews 9

action research 385

case studies 128, 135

closing 226

data collection 213–37

design 218–21

do’s and don’ts 229 ethics 235–6

focus groups 111

groups 230–1

interviewer error 119–20

interviews *cont.*

maintaining control 224

non-response 119

problem respondents 228 questionnaire comparison

215, 216

reliability 218, 219–20, 344–5

safety 232–3

schedules 128, 161–2, 167,

187–8, 205

skills 221–30

structured 111

success rate 107

intra-judge reliability 94

introduction 351, 355, 358, 362

item non-response 119

Johari window 39

joint interviews 230 Journal Citation Report

website 51 journals

articles for 359–63

source materials 48, 49–50

judicial records 269

language interviews 223

reports 365–6

leading questions 190

learning logs 171

legal considerations, report writing 363–5

linear-analytic structure 145, 146

list questions 195–6

listening skills 225–6

literature 67

reviews 52–5, 351, 359, 362

searches 41, 44–52, 69

location, surveys 104

longitudinal studies 32, 82,

112, 173

Magic Project website 50 management action science 376 Mann Witney U-test 311–12 Market Research Society 279 mass media records 270–1 matching 80

mean 299–300

meaning 17, 21, 238

median 299

memory recall 190–1

memory work 386–7

methodology 8–9, 15–34,

65–183, 362–3

descriptive/analytical surveys 98–122

experimental research 25–6, 67–97

quasi-experimental 25–6,

67–97

*see also individual types*

misinterpretation 277

missing data 117–19, 292

mode 299

multicultural interviews 228–30 multiple case sampling 324 multiple case studies 133–4, 145

multiple interviews 230

multiple methods 33, 129

narratives 340–1

National Health and Medical Research Council of Australia website 259

National Union Catalogue of Manuscript Collections website 49

natural accretion measures 264–5 natural erosion measures 266 naturalistic inquiry 23

networking 38, 40, 51

nominal data 286–8, 293–4,

295–6, 306–12

nominalization 366

non-directive interviews 217, 218

non-participant observation 241–2

non-response 107, 117–19,

292–3

normal distribution 300–1 normative research questions

70, 71

note-taking 227, 244–8,

320–1, 324–6

objectivism 67

objectivity 17, 174, 348–9

observation 9

action research 381–2, 385

data collection 238–62

evaluation 165–6

getting out 255

interviews 226

one group, pre-test/post-test design 78–9

one-tailed tests 303

online questionnaires 107,

109–10, 202–4, 206, 210

ontology 16–17

open coding 330, 331–3

open questions 194–5, 198

operational stage 68, 75 operationally defined variables

73–4

opinion polls 101, 269

opinnionnaires 167, 168–9

ordinal data 286–9, 293–4,

314–16

organizational documents 267–8

organizational proposals 55–8

organizational reports 353–7

organizational research 2–4

outcropping 253

over-coverage 117

overt observation 165, 239–41

ownership 277

paradigm crisis 19

Parmenidean ontology 16–17

participant observation 135,

239, 241–3, 253

participatory action research 374–5, 376

passive form, of writing 366–7 pattern matching 139–41 Pearson product moment

correlation 317

people sampling 166

personal constructs 167, 169–70

personal records 270

phenomenology 21–2, 28, 214

photographs 326–7, 385–6

pie charts 294, 295 piloting

case studies 126, 128

non-response 119

questionnaires 189, 205–6

surveys 106

planning 285

action research 378–80

evaluation report 175

experimental research 68

interviews 222

projects 44

report writing 349–50

surveys 103–6, 113–14

political records 269

populations 82–9, 99

positivism 17, 18–20, 22,

31, 67

post-test only design 78

postal questionnaires 107,

108–9, 208–9

postal surveys 119

postmodernism 17, 24–5, 258

power constraint 178, 179

practitioner-researchers 243 pre-test/post-test design

78–9, 80–1

pre-testing *see* piloting predictive validity 92, 172

prejudicial language 190

presentations 367–8

privacy 276

probabilistic perspective 137

probability distribution 303

probing questions 195

process evaluation 157

professional associations 52 professional review evaluation

159, 162–3

programme logic models 143 project management software 44 proposals, writing 55–9 protocols

case studies 128, 138

interviews 220

publicity, surveys 114

purposive sampling 87–8,

324, 343

qualitative method 31

case studies 123

data collection/analysis 319–47

quality

assurance 163

evaluation 172–4

interviews 221

qualitative analysis 342–6

questionnaires 207–8 quantitative method

case studies 123

data analysis/presentation 285–318

quasi-experimental research 25–6, 67–97

questionnaires 9

action research 385

administration 208–11

data collection 187–212

evaluation 167, 168–9

instructions 201–2 interview comparison

215, 216

in interviews 213

questionnaires *cont.*

layout 200–1

piloting 205–6

response rate 108–9,

118, 188–9

staff surveys 114

success rate 107

types 107–12 questions

classification 191

content 191–2

types 193–202

writing 189–91

quota sampling 88

randomization 76, 79

extraneous variables 75

samples 75, 84, 85–7, 323–4

surveys 103

Web randomizers 85, 86

range 300

ranking data 310–11, 314–16

ranking questions 196–7

rapport building 222–3,

252, 253

ratio data 286–7, 289,

293–5, 296–7

readability 365–6

realism 22–3

recommendations 357

references 357, 358, 360, 363

relevance trees 42

reliability 90, 92–4

case studies 130, 131, 138

evaluation 173–4

interviews 218, 219–20, 344–5

observation 256–7

qualitative analysis 344–5

questionnaires 207–8

surveys 106

unobtrusive measures 264

repertory grid 167–8, 170, 171

replication 134

reports 10

case studies 130–1, 143–8

evaluation 175–8

observation 257–8

piloting 205

preparation 75–6

staff surveys 115 style and tone 365–7 writing 348–69

representationalist epistemology 17

representativeness 83, 84–9, 106

research logs 42, 46

research process 3–4, 30

research questions 33, 323

development 69–72

identification 69

surveys 103–5

research topics 4, 8, 35, 69

action research 378–9

ideas generation 40–2

selection 36–42

to avoid 42–3

response categories 200 response rates

improvement 118–19

interviews 214

questionnaires 108–9,

118, 188–9

telephone surveys 112

*see also* non-response responsive evaluation 164

results 355, 356, 363

review process 367

role taking constraint 178, 179

running records 267–71

safety, interviews 232–3

sales records 269–70

samples 82–9

evaluation 166

qualitative analysis 343

qualitative research 323–4, 325

random 75, 84, 85–7, 323–4

selection 83–4

size 85, 102, 134, 137–8

surveys 99, 105

sampling error 116–17, 302

sampling frames 83, 324

error 116–17

staff surveys 114

surveys 105–6

scale questions 197–8 schedules, project proposals 57

scientific approach 6, 18–20, 159

selective coding 330, 336, 337 self-administered questionnaires

108–10, 208–10

self-development 37, 39

semi-structured interviews 214,

215–17, 218, 219

sensitive questions 193, 199

sequencing questions 198–9

significance level 302–3 simple random sampling 86–7 single case studies 131–2, 145

snowball sampling 88

socially desirable responses 108, 109

societal action science 376 Spearman’s rank-order

correlation 315–16, 317

sponsorship 38, 40, 43

stability 93

staff opinion surveys 112–16 stage sampling 87

standard deviation 300

standardization 99

statistical validity 92

statistics 285–318

stratified random sampling 87 structured interviews 107, 111,

210, 215, 218, 219

structured observation 239,

248–50

sub-categories 333, 334–5, 337

sub-groups 106, 254

subjectivism 17

subordinate questions 70

summarizing 226

summative evaluation 157,

159, 174

support networks 38, 40

surveys 8, 123

analytical 27–8

cross-sectional studies 31

design 98–122

evaluation 152

problems 383

selection criteria 125

suspense structure 146

SWOT analysis 42 symbolic interactionism

20–1, 241

symmetry of potential outcomes 40

systems evaluation 159,

161–2, 173

*t*-test 308, 310

table of contents 354, 358

tape recordings 227, 326,

345, 385–6

technical reports 353–7 technology

ethics 275–81

monitoring people 274–5,

278, 279, 281

running records 267–8

*see also* Internet;Web telephone

interviews 232, 233

telephone *cont.*

questionnaires 107, 210–11

surveys 111–12

theoretical sensitivity 338–40 theory building structure 146 theses 144, 358–9

thick description 28, 31 time

available 38

case studies 125

observation duration 243

report writing 351–2

sampling 166

time-series analysis 142–3

timeframes 31–2, 104 timing

report writing 348

surveys 114

title page 354, 358, 361 Total Quality Management

(TQM) 156–7

transcription 326, 330, 345

transparency authority 178, 179

triangulation 33, 257, 326, 344

trustworthiness 345–6

two-tailed tests 303

Type I/II errors 302–3, 304

uncontrolled variables 103

under-coverage 116–17

unit of analysis 128, 323

unobtrusive measures 9, 124, 327

data collection 263–82

selection criteria 125

unsequenced structure 146 unstructured interviews

213, 218

utilization focused evaluation 164

validation

action research 387–8

evaluation 162–3

grounded theory 338

validity 76, 79, 90–2

case studies 129, 135–8, 141

evaluation 172–3

interviews 218, 219

observation 239, 255–6

qualitative analysis 342–4

questionnaires 192–3, 207

variance 116, 300

video recordings 227,

345, 385–6

visual records 270–1

viva 367

volunteer sampling 88

voting statistics 269

Web

archives 272–3

case study reports 144 controlled accretion

measures 266

copyright 365

ethics 275–8

Flash reports 115

randomizers 85, 86

Web-based questionnaires 202, 204, 206, 210

Web-based surveys 109, 110

*see also* Internet whistleblowers 243 Wilcoxon signed-ranks

test 308