Oxford Handbooks for Language Teachers

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Doing Second Language Research

OXFORD
UNIVERSITY PRESS

Great Clarendon Street, Oxford OX2 6DP

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide in

Oxford New York

Auckland Bangkok Buenos Aires Cape Town Chennai
Dar es Salaam Delhi Hong Kong Istanbul Karachi Kolkata
Kuala Lumpur Madrid Melbourne Mexico City Mumbai
Nairobi São Paulo Shanghai Taipei Tokyo Toronto

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First published 2002
Second impression 2003

ISBN 0 19 437174 3

Printed in China

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PREFACE

The last two decades have seen growing importance placed on research in second and foreign language teaching and learning. Researchers see their work as important, of great relevance to practice. Yet to teachers their research often seems to be remote from the practical world of teaching; research is done by people called researchers, teaching done by people called teachers. But most researchers do teach and most teachers can, and we maintain should, also be researchers. Teachers need to be participants in the process, not merely consumers. This book sets out to provide the means by which they can achieve this as well as to answer the question of why it is important that they should.

The books on second language research methods that have been published over the last twenty years do one of three things: they help classroom teachers to become better consumers of research studies relevant to their own teaching (Brown 1988); or they train teachers to set up and conduct research studies at their own institutions (Butler 1985; Woods, Fletcher, and Hughes 1986; Seliger and Shohamy 1989; Bailey and Allwright 1991; Johnson 1992; Nunan 1992; and Freeman 1998); or they both show how to do research and also provide analyses of exemplary studies of particular design types (Hatch and Farhady 1982; Hatch and Lazaraton 1991).

None of these books, however, put readers *inside* the research process as subjects or data analysts or research reporters. The book we have written here, *Doing Second Language Research*, assumes it is both possible and desirable to do just that—to give readers an intimate sense of research processes by involving them in the tasks that all research participants experience.

To that general end, this book has the following more specific goals:

1 *To familiarize readers with the basic types of research design used in second language studies.* To do so, we explain the characteristics of various design types, the logic underlying design selection, the steps typical of each type of research design, and the purposes of such designs. All necessary research terms are systematically introduced in the contexts in which they are typically used.
2 *To provide a* feel *for what research activities are like in second language studies by engaging the reader in several roles within a variety of mini-studies.* The reader's roles include that of research subject, research organizer, research data collector, research data analyst, and research reporter. For

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PART ONE

Introduction

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Compiling research data

Before anything useful can be done with research data, you will need to compile the data. Compiling data means putting all the data together in one place in such a way that you can more easily analyze and interpret them. This might mean putting numerical data in rows and columns on graphing paper or in a spreadsheet, or it might mean transcribing taped interviews, or coding activities observed in a classroom. The exercises in this section will introduce you to this concept of compiling data. You will do it in many different ways as you progress through the book.

Exercise 1.4

Previously we asked you to think about some ways to classify the association responses that you and the University of Hawaii group made. Classifying is a central activity in compiling data.

1. Form several broad columns on a piece of paper and put what you see as similar associations in one column. Are there *synonym-like* responses, *attitude* responses, *sub-component* responses, *result* responses? You may also need a *miscellaneous* column where you put responses that don't seem to group with any other responses.
2. Label each column with what you consider to be a descriptive cover term.

Analyzing research data

As reported in Brown (1992b), during 1991, the TESOL Research Task Force formed by the executive board of TESOL (an ESL/EFL teacher organization called Teachers of English to Speakers of Other Languages) sent out a questionnaire to 1000 TESOL members randomly selected from the General Membership of TESOL, and 200 each from four interest sections: Applied Linguistics, Higher Education, Research, and Teacher Education. The overall return rate was 33.4 percent. One question on the questionnaire was 'How would you define research?'

Some of the anonymous respondents defined research as follows:

1. Finding the source or cause of something.
2. It is peeling away the layers of onion so as to see how and why something works or doesn't work or where it fits in the grander scheme with increased understanding.
3. Investigation into how and why things work or don't work.

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producing it, you are now ready to analyze your own data. You have also looked at how a number of people, including yourself, have defined research. Starting with one or two word associations, you then looked at examples of more elaborated definitions of research and looked at ways in which definitions of have been categorized.

Exercise 1.8

How would you categorize your own definitional statement of research?

1. In which of Brown's five categories would you place your own definition? Explain why you think your definition belongs in this category.
2. Which of the definitions given by Brown's respondents comes closest in meaning to your own?
3. Is there a definition in Brown's examples which you particularly favor, that you might like to adopt as your own? If so, why?

Designing research

In this section, we will explore two issues central to designing good research studies: research traditions available to second language scholars and contextual factors that must be considered in designing second language research.

Research traditions available to second language scholars

Language researchers draw on many traditions in doing their work. Figure 1.1 attempts to sort out the relationships among those traditions, starting with two basic categories: secondary and primary research.

SECONDARY RESEARCH includes any research based on secondary sources, especially other researchers' books and articles. Secondary research is further subdivided into LIBRARY RESEARCH (which includes any research done for a school or university course, usually in the form of a term paper) and LITERATURE REVIEWS (which include any research based on the literature that adds to the common body of human knowledge).

PRIMARY RESEARCH includes any research based on primary, or original, data (for example, students' test scores, classroom observations of their language learning behaviors, questionnaire responses, etc.). Primary research is further divided into qualitative, survey, and statistical research.

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4 ***The local context*** We use local context to refer to the actual situation in which researchers and those being researched meet. This local context may be a classroom, or a private home, or a laboratory, or an Internet bulletin board. Here the physical context (for example, classroom size and shape), chronological context (for example, time in the academic year), social context (for example, degree of homogeneity/heterogeneity among students), pedagogical context (for example, class learning/teaching styles), and psychological context (for example, comfort level of participants in regard to research study participation) all will shape research possibilities (and impossibilities).

5 ***The personal context*** You, as a reader of this book, have come with certain presuppositions about research and your own possible role as researcher. We trust that your reading and engagement with the ideas presented here will enlarge your view of what research is and expand your own sense of capability to undertake research of a variety of types. But you will always have an individual view about what you do best, like best, and believe most valuable. (One can hope these intersect.) It is well to be able to expand your capacity to undertake and to learn from various kinds of research studies. It is also good to do periodic self-checks to evaluate your own growth and to assess your own beliefs, your own sense of competency, and your own sense of priorities. These are the ultimate contextual factors that will determine your success as a researcher in the exciting field in which you are now an apprentice.

Exercise 1.9

We are, in one sense, all *experts* in some local context. We all have spent a lot of time in schools and in study and have our biases towards which elements of local context best support or discourage learning.

Review the elements discussed under *the local context*. Sketch out the contextual elements that you feel would be optimal in undertaking a research study you might imagine doing in some local situation.

Exercise 1.10

We have discussed a number of different senses in which *context* plays a critical role in second language research. All of these contextual considerations are important in deciding what research to do and how to do it. Some of these contexts may be more personally meaningful to you than others.

Consider two or three of the contexts of research that seem particularly important to you and make a list of 3 to 5 reasons why you feel these are important.

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be both qualitative and quantitative? What is the distinction between interviews and questionnaires in survey research?

5 What are some examples of how functional contexts and design contexts might affect your choices in doing your research? How might international, national, professional, institutional, local, and personal contexts shape your research in a given study and even your research agenda over a professional lifetime?

By now, based on what you have experienced in this chapter, you may have decided that you prefer one type of research or another. As we suggested above, one potential problem with deciding too far in advance is that your choice may limit your ways of thinking about and studying a particular problem or issue. Indeed, the strongest researchers may be those who remain flexible, that is, researchers who are not bound by artificial distinctions like qualitative versus quantitative, ones who will be able to adapt their research methods to the issues they are trying to learn about, and to the places their research leads them.

Summary

In this chapter, you found that 'research' has many definitions. You yourself explored the characteristics of research and tried your hand at defining the concept. After compiling a few definitions, you examined some data from the TESOL survey project and tried analyzing those data into five different categories of response: types, topics, purposes, processes, and cynical answers.

You also examined the research traditions available to you as a language teaching professional and considered the contextual factors that need to be considered in doing research (including international, national, professional, institutional, local, and personal contexts). Then you examined the continuum bridging qualitative and quantitative research noting that both research approaches come in many types and that there is no clear line dividing them. Finally, you reflected on the various aspects of research covered in this chapter.

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Exercise 2.1

(Warm-up)

Below are some samples put together from several L1 diary studies of the stages that most children pass through in mastering the adult forms for *negation* in English. There are four samples given for each of five stages. The blocks of samples are not given in chronological order of development but in random order. Your task is to

1. re-sort the blocks of samples into probable chronological order,
2. state what you think the characteristics of negative sentences are at each stage,
3. make up a new sentence to add to each block indicating how you think negation is expressed at that stage, and
4. discuss your analysis with a partner.

Sample A

I don't can explain.
He don't will like it.
Don't have any monies.
I don't see nothing mop.

Sample B

No go.
No mitten.
No fall.
No stop there.

Sample C

Do not tell her.
We don't like him.
He doesn't laugh like us.
She didn't believe me.

Sample D

You no sit there.
He no bite.
There no squirrels.
They no have water.

Sample E

They don't want it.
You can't tell her.
He's not coming in.
It's not danger.

You can see obvious changes in grammar, and speech segments clearly get longer as children get older. What are some of the other signals of advancing linguistic maturity?

Use Table 2.1 to record your answers.

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F Helen will go to school with blind girls Helen can read and count and spell and write like blind girls mildred will not go to boston Mildred does cry prince and jumbo will go to boston papa does shoot ducks with gun and ducks do fall in water and jumbo and mamie do swim in water and bring ducks out in mouth to papa.

(Keller 1954)

Compiling case study data

Exercise 2.3

Using whatever strategy works best for you as a group, prepare a table that combines data from the group in the form shown in Table 2.2. When you are done, your table should look similar to the one shown in Table 2.3. Be sure to add up the totals for each row in the column furthest to the right in order to cross-check that your data make sense and that there is nothing missing. Discuss any disagreements that show up in the table and decide as a class what the most likely chronological order must be. Record the identifying letters for those ranking in the bottom row of your table. (Again, see example in Table 2.3.) For those readers who are working alone, you can adapt this exercise by combining your personal data with the example data in Table 2.3. Then decide what you think the correct rank order ought to be.

The letter samples show evidence of a variety of linguistic and letter format changes as Helen matures and her language capability increases. Linguists typically categorize language changes and language foci in terms of:

PHONOLOGY: the study of language sounds
MORPHOLOGY: the study of word structure
SYNTAX: the study of sentence grammar
DISCOURSE: the study of the organization of longer spoken and written texts

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Table 2.4 Chart for recording noun data in the Helen Keller letters (www)

	Proper Nouns	Simple Nouns	Plural Nouns	Compound Nouns	Pronouns	Noun Phrases
Letter 1						
Letter 2						
Letter 3						
Letter 4						
Letter 5						
Letter 6						

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Table 2.5 Developmental Sequences for L1 English vs. L2 English/L1 German

L1 English			L2 English/L1 German		
I		no	I-II	a	no
					no, you
II	a	no, Mom			
II	b	no close	II	b	no play baseball
		'don't close the door'			'let's not play baseball'
III		Katheryn no like celery	III	a	1) that's no good
		Katheryn not quite through			2) lunch is no ready
		I can't open it			3) I got nothing shoe
					4) John go not to the school
					5) I can no play with Kenny
					6) I cannot hit the ball
				b	I didn't see
				c	I didn't can close it
IV	a	you don't want some supper	IV	a	don't say something
	b	I am not scared of nothing		b	don't tell nobody

(Wode 1978: 111)

Several things are worth noting in Wode's text and table:

1 The table and text are interlocked. A table appears with accompanying text explaining the table and highlighting points in that table the author wants the reader to focus on.
2 The author compromised here with transcription of the language data. He was not concerned with pronunciation, so instead of phonetic transcription, he used *modified* written text (i.e. no sentence capitalization and no sentence punctuation) to report his data. The author decided on what data reporting form best suited his purpose.
3 The number of the participants was not reported. Wode was trying to show some general trends over a large number of mixed participants with mixed data. He was not reporting on any specific child or larger group of children.

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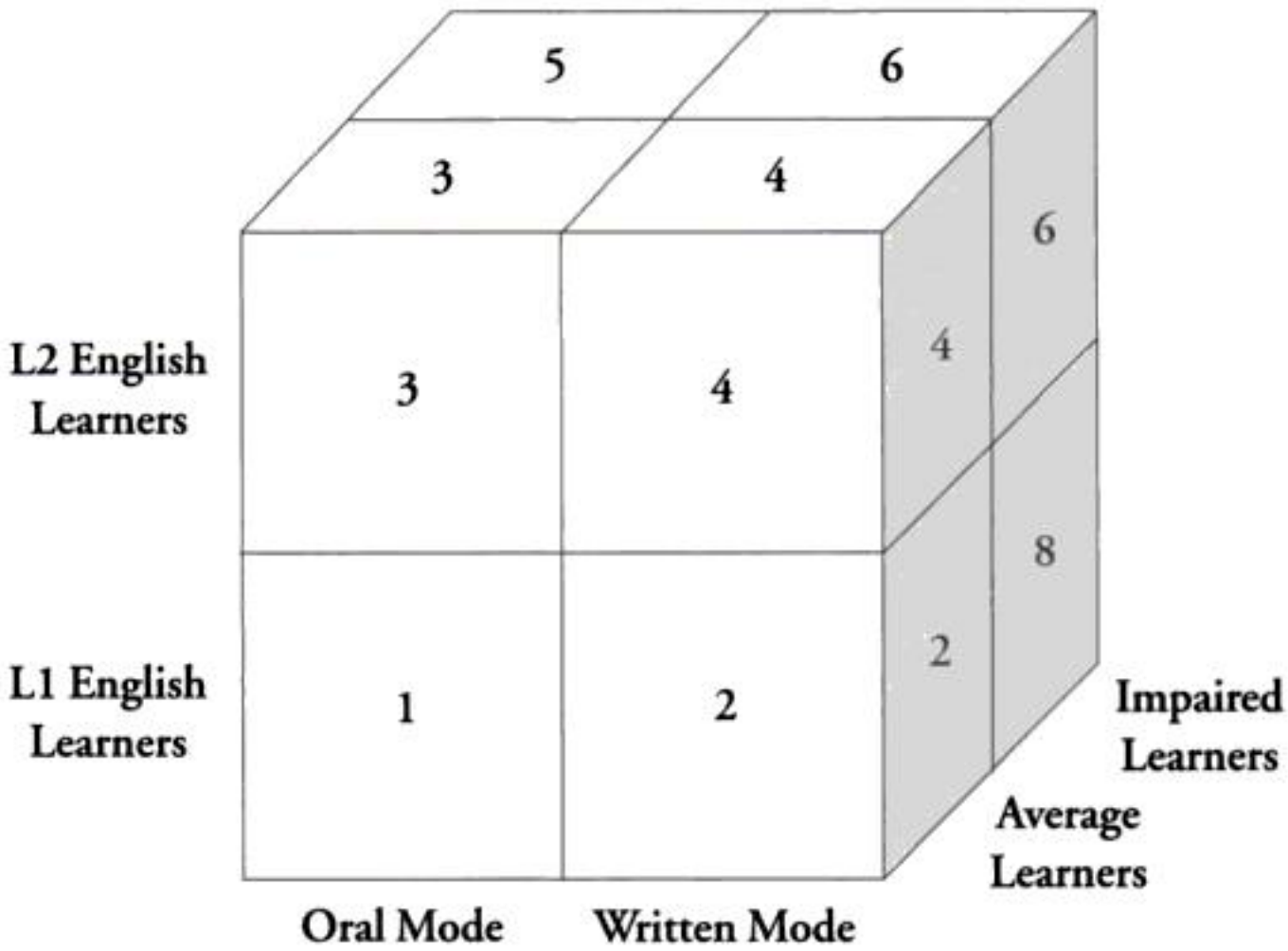
4 From your own point of view, rank the cells from 1–8 in terms of how central to a literature review accompanying the Helen Keller study you think each of these categories might be.

5 What additional cells might you add to develop a research review for the Helen Keller study?

Figure 2.1 Language acquisition literature review categories for Helen Heller research study



Twenty-four hour self-case study

We are going to ask you to make a twenty-four hour case study of yourself, reporting all the language you use and can identify during this period. First, however, we need to introduce some descriptive terms which will help you in this process.

The use of language is often seen as the defining characteristic of the human animal. Our interactions, our thoughts, even our dreams, are surrounded by and steeped in language. Sometimes the language is pretty much one-way as when we listen to radio or recorded material, watch television, daydream, or get (or give) a scolding. At other times, however, it is two-way, three-way, or many-way.

One way to analyze, simplify, and organize the purposes of language use is in terms of a model of *language functions*. A variety of models have been proposed;

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4 Do you think this was a *typical* language day for you? In what ways was it not typical? Was there anything that surprised you?

5 Compare your data analysis with a partner. How was your case study like your partner's and how was it different?

Exercise 2.13

This exercise is in the form of preparing an abstract, one of the basic elements we listed earlier as part of the standard form of research reporting.

Read the following fictional abstract of a twenty-four hour self-case study noting the types of information that are included and how they are organized. Then, using this as a model, write up an abstract (as if for an article in which you are reporting the results of your case study) and which highlights the key data from your study.

A Day in the Language Life of Myrtle Yamamoto (Abstract)

The aim of this study was to track the amount and kind of language use experienced by one native speaker of English during a 24-hour (working day) period in local setting. This was an observer-participant study in which the subject/analyst was a 45-year-old, native English-speaking, female language teacher living in Boston, Massachusetts. The type of language use (conversation, lecture listening, daydreaming, etc.) was labeled impressionistically, while the functional classification for language use (emotive, referential, persuasive, etc.) was coded using the six-function system developed by Jakobson (1960). Times for each language use event were recorded in minutes to the nearest minute. Data were tallied in a notebook carried for the purpose either immediately following the use event or retrospectively within two hours of the use event when immediate record keeping was impractical. Results showed that the types of language use were quite broad (31 types noted) while the functional language use was largely restricted to two functions—phatic and referential. A further study is planned in which periods of silent language use (dreaming, thinking, under-breath cursing, etc.) are reported and analyzed in greater detail.

Interpreting case study research

As with any research model, there are strengths and weaknesses to the case study. Bailey (1991) provides a good summary of the strengths and weaknesses for one type of case study in her article entitled 'Diary Studies of Classroom Language Learning: The Doubting and Believing Game'. For Bailey, the 'doubting and believing game' refers to two stances towards research—one, critical and skeptical in questioning the author's position, and the other adopting the author's position uncritically and seeking those insights which

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[Hildegard Age 5] has a desire to learn German, because she would like to be taken along to Germany some time. Once she offered me her entire wealth of ten cents to enable me to pay for the journey… Favorite prices for her are $3.00 and 10 cents; they have no particular individual value. The other day she measured herself with a ruler and declared that she weighed sixty pounds… Footnote: This item drives home to me the value of the daily diary. In my memory the incident had become transformed thus: she looked at a thermometer and said that she weighed $60.00. This version improves the story, which I have told many times when I did not feel the weight of scientific responsibility. (Leopold 1978: 24)

Significance of case study research

In order to understand something of the significance of case studies it is worth spending some time on looking at the meaning and derivation of the word 'case'. 'Case' is used in a number of different disciplines including law, medicine, sociology, and, indeed, linguistics. Etymologically related to *chance*, its ancient adjectival form is *casual*, one of the definitions of which is 'happening or coming to pass without design, and without being foreseen or expected'. In case studies, unlike experiments, we have little or no control over how the form or content of the data will appear. In this sense, there is *chance* involved in what we will find and what the relevance of the findings might be. Most researchers who undertake *case studies* assume, however, that there is going to be *a design* in their case study and that they are going to discover and present to the world some heretofore unrecognized insights in connection with that design. Nevertheless, there is always something *chancy* about case studies. The researcher may pick an unfortunate case to study; or the researcher may not be around to observe when the really interesting patterns emerge; or it may be that no one sees any relevance in the results obtained to the larger world of research concerns.

As we have noted, a number of case studies have been done by language scholars observing the first language or second language development of their own children. Michael Halliday (1975), Werner Leopold (1939–1949), Ruth Weir (1962) are among the many linguists who have published studies of the language development of their own offspring. Both the research techniques and the findings of these studies of children's language acquisition have been adopted and adapted by SLA researchers in their studies of the development of second languages by adults.

In recent years, there have been a number of candid *self*-case studies by established applied linguists analyzing and reporting on their own learning, in adulthood, of a second language. John and Francine Schuman (1977),

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Summary

In this chapter, we have examined the design, execution, and reporting of developmental case study research as it has been carried out in L1 and L2 studies. We focused primarily on single-participant case study research as it has been used in the study of language development. We suggested that case study research is one of the most attractive styles of research for the first-time researcher, in that organizational and reporting style tend to be less formal than in other kinds of study, and case study researchers always have ready participants in themselves, their children, and their friends. A major caution in both design and interpretation of case study research involves the generalizability of such research. Case study researchers need to assure their audience that the study has been thoroughly and accurately documented and that implications of the study are clearly drawn, and not overstated.

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3 RETROSPECTIVE STUDIES where the report is subsequent to a given mental task and where information consists of selected foci, descriptions, explanations and interpretations. Reporting on the route by which you arrived at your present location would be an example.

Whether you are working alone or working in a class situation, you should be aware that many of the most valued introspective studies are of the solo or self-report type, where one person is both participant-subject and analyst. Diary studies, which we discussed in Chapter 2, are an obvious type of self-reporting and self-analysis. Some contemporary second-language course instructors have learners keep some sort of introspective record of their language learning impressions as a component of the language learning course. In these cases, students are acting both as language-learning participant-subjects and second-language acquisition researchers.

All researchers working in the introspective tradition emphasize the importance of recording—both audio and video where possible—participant responses for later analysis. If you are working on your own, you will definitely need to record your introspective verbalizations on audio tape for later analysis. In some class situations, we acknowledge that having enough tape recorders to share between every two students in the class as well as having noise-restricted, non-distractive areas within your study areas for tape recording may not be realistic expectations. Alternative approaches could include working in pairs and having one member of the pair take notes of what the other says. You may also be able to book time in a language laboratory if you are working in an institution that has one.

The following exercises are designed to give you some experience in carrying out some *classic* introspective tasks whether you are working alone or as part of a class. If you are using this text on your own, you will be wearing two hats. Where exercises are described as *pair* exercises, you will be acting as your own partner, first tape recording your introspections as *participant-subject* and then analyzing these recorded introspective records as *researcher*. Most of these pair exercises are easily interpretable as *two-hat* exercises for the solo learner. In addition, several of the activities have a game-like quality, and you may want to ask a family member or friend to act as your partner while you do the exercise.

We have tried to observe the dictums listed above (page 55) and to encourage you to do the same as you carry out the task exercises and as you analyze the results.

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Anagram puzzles have long been popular in a variety of alphabetic languages. An anagram is a spelling out of a word from another word or a collection of letters. Thus, 'arts' is an anagram of 'tsar' or of 'star'. Scrabble is essentially an anagram game. A number of texts also include anagrams as second language learning exercises as well. People go about solving (or creating) anagrams in a variety of different ways. Anagrams thus provide a good basis for certain kinds of introspective linguistic studies and/or as warm-ups for other kinds of studies.

Exercise 3.5

Working in pairs, begin by deciding who is the *participant* and who is *researcher*. Then do the following:

1. The *researcher* gives the *participant* a six-letter anagram to solve. In this case, the anagram is LIPYMS.
2. The participant works on solving the anagram (paper and pencil are OK) all the while *talking aloud* about what he is doing. Remember the primary point of the exercise is recording the thought processes, *not* solving the puzzle.
3. The researcher records or writes down what the participant says while he is solving the anagram.
4. When you have finished, reverse roles, and follow the same procedures using a different six-letter anagram and repeat steps 1, 2, and 3.
5. Both partners should work together in answering the following questions:
   a. Were there any problems in solving the anagrams?
   b. Were the problems clear from the *talk aloud* procedures?
   c. Did the two *participants* use different strategies in solving the anagram puzzles?
   d. Would either participant like to try using some of the strategies their partners used in solving a new anagram? For example, some participants find that organizing letters in a circle rather than in a line allows them to see patterns more quickly.

Two of the areas in which introspective studies have proved most fruitful have been in the investigation of the processes involved in reading comprehension and written composition. These are obviously areas of keen interest to language researchers and language teachers. One of the frequently used formats for studying reading processes involves the use of *sign-posted* reading texts. The reading text is prepared in such a way that there are periodic markers in the text signaling the reader to momentarily stop and report what she is thinking about the text at this point. The researcher

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when we are talking about the *meaning* or *use* of a sample of *language*, coding is usually not so straightforward. A host of codes for language grammatical types, sound types, function types have been proposed, but none of these can be considered standard in the same sense that a meter (or yard) stick is an agreed-upon standard.

Consider the coding systems used by researchers examining the strategies that readers bring to bear in the understanding of a new piece of text. The coding systems proposed for analyzing reading comprehension verbal protocols include highly detailed and complex models such as that proposed by Pressley and Afflerbach (1995) whose comprehensive model of 'constructively responsive reading' attempts to integrate the full range of reading processes included in the coding scheme. In contrast, systems containing only two elements have been proposed in which all reading responses are coded as being either *reflexive* or *extensive*. REFLEXIVE RESPONSES are those in which readers direct comments away from the text and towards their own thoughts and feelings, usually in the first or second person, whereas EXTENSIVE RESPONSES are those in which readers attempt to deal with the message conveyed by the author, usually in the third person, rather than relating the texts to themselves (Block 1986).

Critical questions in interpretation of verbal protocol data involve the coding system used:

1 Are the code categories clear and unambiguous?
2 Is the coding scheme reliable? Will alternative analysts code data in the same way?
3 Do the results of coding lead to useful analyses?

Analysis of verbal protocols

We have thus far sampled just a few of the many applications for verbal protocol research.

Within each of the introspective study applications, a variety of task types is possible. Obviously, the type of analysis the researcher performs will vary with application and task type. For example, within the application type we have labeled 'Solving Anagrams' there are at least four task types:

1 Task Type A: How can all the given letters be arranged to form a single word? (NPEHPA = HAPPEN)
2 Task Type B: How many different words of three letters or more can be formed from the letters in a given word? (ALPHABET = BET, BEAT, TAB, PEAL, TABLE, etc.)
3 Task Type C: What longer word might all of these words have been made from? (TEAR, SUN, TRUANT, RESTART = RESTAURANT).

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Table 3.2 Think-aloud protocol from participant (George) solving the anagram ROHMET

Response		Code (C or A)
1	Let's see rohmet	
2	Or maybe metroh	
3	t-r could be first	
4	trohem	
5	t-h-r?	
6	throme	
7	throw me?	
8	r-m at the end?	
9	Something orm?	
10	h-e-r goes together? her	
11	moth?	
12	Oh, stupid me! mother	

A variety of schemes have been proposed for coding data by subjects as they make introspective comments on a reading text. Table 3.3 shows such a coding scheme as developed by Brown and Lytle for coding exhibited reading strategies in reading think-alouds.

A verbal protocol taken from a second language learner of English as he introspected on the text 'The Lady of the Moon' is shown in Appendix 3.2, page 266. (This was the reading focus for Exercise 3.6.)

Exercise 3.12

Look at the verbal protocol in Appendix 3.2 and do the following:

1. Code the protocol according to Brown and Lytle's coding system.
2. Answer these questions:
   a. What problems, if any, did you have in applying the coding scheme to the data?
   b. Were there ambiguous cases where you wanted to apply more than one code? Is multiple coding a useful solution?
   c. Were there instances where you felt none of the code categories applied to the data sample?
   d. Could you create a new code in the same coding format to cover such a case?

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1 review these objections to introspective studies;
2 check if the researcher has recognized the potential problems of such studies; and
3 see if the researcher has tried to minimize the impact of these problems.

Here, we will review some of these potential problems and suggest how their impact can be minimized.

Objection A *Introspection on thinking processes of any type is either impossible or unfeasible.* Several investigators have held that it is very difficult for participants to report on the processes of their own thinking. In the heyday of introspection studies of the early 20th century, researchers felt it was necessary to give lots of practice in introspection before you got to the *real* experience. Titchener, a leader in introspective studies of this period, gave each of his participants 10,000 practice trials before he recorded trial 10,001 as the *real thing* (Boring 1953).

Even more cautious researchers believe that the self-reporting of thinking processes is impossible, however well participants are trained. In a widely cited paper, Nisbett and Wilson (1977: 233) held that, 'People often cannot report accurately on the effects of particular stimuli on higher order, inference-based responses … and sometimes cannot even report that an inferential process of any kind has occurred.'

As Ericsson and Simon note, the key words here are *often*, *sometimes*, and *higher order*, *inference-based* responses. Proper procedural cautions (particularly in respect to researcher instructions and participant training), say Ericsson and Simon, can reduce *often* and *sometimes* to *rarely*. We know that 'the more automatized a skill is, the less its underlying cognitive processes are available for introspection' (Lennon 1989: 377). Therefore, researchers need to exercise care in choosing introspective tasks that do not require participants to deal with introspection of higher order, highly automatized linguistic processes.

We should note that a number of the activities of most interest to language educators are not higher order or automatized linguistic processes. Some of these are deliberate undertakings; language users are aware of and can report about these in terms of options considered and choices made. For example: (a) trying to remember a word or name (in any language), (b) conscious efforts to produce utterances that are logically coherent, situationally appropriate, and grammatically correct in a language being learned, (c) trying to make sense of a difficult reading passage, (d) determining how to organize a written piece for optimal reception, and (e) translating a text from L1 to L2 or vice versa.

In examining a report of an introspective study, you need to ask yourself if the language activity being studied is of the type about which we can

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suggests that introspective studies more typically involve cognitive tasks than affective/social tasks.

Exercise 3.19

Take one of the mini-introspections you have done, and write answers to the following question:

1 Identify the study and code it using the adapted Færch and Kasper system in Table 3.4. Some of the classification categories may not be fully transparent, but do your best to interpret each of the categories, maybe through class or partner discussion.
2 Did the classification suggest any types of introspective research you might not have considered or been aware of before? What were these?

Not only is there a variety of types of introspective research, there is also a variety of different uses to which introspective research has been applied. For language teachers, there are a number of payoffs which current work has provided. These payoffs include the use of introspective techniques and findings as:

1 language teaching instructional tools, especially in the teaching of reading and writing (Lytle 1982);
2 a guide to text and materials writers with regard to readability, etc. (Jacobs 1997);
3 a source of insight into pervasive questions of discourse coding (Kasper 2000);
4 a source of a classification system of task types (Skehan 1997);
5 a guide to the classification of the subject matter of tasks (Cohen 1987);
6 an aid to the identification of learning strategies (Chamot 1999);
7 a source of insight into how the brain works (Simon 1979);
8 a guide to test design and alternative modes of evaluation and assessment (Green 1998); and
9 a catalyst for learners sharing effective ways to learn (Rodgers 2000).

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4 task completion conversations between learners and learners, as well as
5 the internal conversations between authors and readers.

The study of classrooms and of interaction have independent and rich research histories.

We will be considering the intersection of these traditions—second language acquisition studies involving research into interactions within a classroom environment. We will be looking in particular at two issues that have been of long-term interest to classroom interaction researchers—the nature of teachers' correction of learner errors and learner-to-learner communication in task-based group work.

Experiencing classroom research

Although we have defined classrooms and interaction quite broadly, most classroom interaction research studies are done in regular school classrooms and focus on interactions between teachers and learners or between learners and learners.

Given our experiential approach to the study of second language acquisition research, our first choice would be to ask you to go out and gather some detailed data from language teaching classes. Unfortunately, we cannot require you to go and collect data from live second language classes for a variety of obvious reasons: (a) it may be a time when no classes are in session, (b) you may have difficulty gaining access to classrooms, (c) you may not fit inconspicuously into a language class, (d) it may be difficult to make high-quality recordings of class interactions, (e) the data might be such that you can't analyze them usefully because the class happens to be watching a film, and so on.

A second approach might be to use the daily doings of your own class—the class you are in using this book—as the source of interaction data. Again, there are some problems with this: (a) the class is not a language teaching class, (b) it is hard to participate in a class fully and simultaneously do all the jobs a classroom researcher has to do—one role or the other will suffer, and (c) the teacher of this class may not be keen to be a research object right now.

A third approach would be to get a film or video featuring a lot of school classroom footage and use this as the data source. There are problems with this choice as well: (a) while there are many films featuring classrooms as settings—*Blackboard Jungle*, *Up the Down Staircase*, *The Breakfast Club*, *Lord of the Flies*, *The Dead Poets' Society*, *Stand By Me*, for example—these are movie classrooms and not much like classrooms in real life; (b) there are not many feature films focusing on language teaching and learning; and (c) films

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Exercise 4.3

Create an error and an error correction for each of the nine types. Pick errors with 3rd person present tense verbs as your learner error type (for example, **Lim like to play hockey*, or **Kim want to hits him*). For each error type, write down the error example and the example of a possible teacher correction. Take the roles of both error maker and error corrector. If working with a partner, take turns in these roles. Stay with this one type of student error (3rd person singular present tense verbs) but use different vocabulary for each example. Keep your list of error and error correction examples for later data analysis. Be sure to note the error correction types you did not include in your list in the previous exercise.

Learner-to-learner interactions

In the previous section you have experienced something similar to classroom interaction research as it bears on teachers' interactions with learners. The other major type of classroom interaction is between learners and learners. In communicative methodology, increasing emphasis is placed on language learning tasks which involve pair work and group work. Given this perspective, it is obviously critical to know what goes on in these convocations of learners and how, if at all, learner-to-learner interactions contribute to language acquisition.

Since the following exercise involves two learners in an interaction situation, it would be helpful if those of you working alone could get a family member or friend to do the picture sequencing task with you. If you can't find anyone you can convince to play this game with you, you can find data for learners doing this task in Appendix 4.2 on pages 272–3.

In one area of pedagogy, interaction patterns and learning outcomes have been studied extensively over the last 40 years. This area is labeled broadly cooperative learning.

> Cooperative learning is group-learning activity organized so that learning is dependent on the socially structured exchange of information between learners in groups and in which each learner is held accountable for his or her own learning and is motivated to increase the learning of others. (Olsen and Kagan 1992:8)
>
> Research studies of cooperative learning in very diverse school settings and across a wide range of content areas, have revealed that students completing cooperative learning group tasks tend to have higher academic test scores, higher self-esteem, greater numbers of positive social skills, fewer stereotypes of individuals of other races or ethnic

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We talked in the previous chapter about the critical task of *segmenting* the transcription so that each segment represents a unit of an apparent short thought or utterance. These segmented units become the core elements that you will code and analyze. In one sense, segmentation of classroom interaction data is easier than segmenting introspection data. The major segments in interaction data usually comprise each speaker's utterances. The beginning and end of segments are often signaled by change of speaker.

Teacher error-correction data

The word 'compile' comes from the Latin meaning 'Come, let us pile together' (well, almost). Certainly, one of the tasks of compiling is to get the data collected into piles of some sort for later analysis. For example, if you want to look at characteristics of certain kinds of teacher error correction, you will need to have all the error corrections of the same kind piled together. However, what seems obvious about sorting items into a pile for one researcher may not be so obvious to another researcher.

Exercise 4.5

In the previous section, you generated some learner errors and some examples of teacher correction types in response to those errors (Exercise 4.3). This is a good opportunity to check if the labels you gave your error correction examples would be the same labels as someone else would give to these examples. The following directions suggest how you may do this.

If you are working on your own, you will find samples of various kinds of teacher error corrections in Appendix 4.2 on pages 272–3. Your task is to classify your own earlier examples and the examples in Appendix 4.2 as to the type of teacher error correction you think each sample represents.

1. Retrieve your teacher error correction examples from Exercise 4.3. Since there were nine error correction types, there should be nine examples. Prepare nine slips of paper, each with a single example on it. Make sure that the error correction type label is not included on the slip.
2. If you are working in a class, form pairs and then join with another pair so that you have a group of four. Give the other pair your nine slips in random order.
3. Now with your partner, label the other pair's nine examples according to your judgement as to the error correction type. Write your error correction type label on the back of each slip.
4. Rejoin with the other pair and exchange your labels. Did you give the examples the same labels as the pair that created the examples did?

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Exercise 4.7

Review all the error correction example types and their classification labels from the previous section (Exercise 4.5).

1. As a teacher, what would your preference be for these different types of error correction? Rank order the nine error type from your most favored (1) to least favored (9).
2. Consider the same error correction types from the your own perspective as a language learner. Rank the correction types from most favored (1) to least favored (9).
3. How similar are your two rankings, as teacher and as learner?

If you are using this text in a class group, each member of the class should now vote for which of the nine types of error correction strategies they, as teachers, personally prefer, using the same ranking system as above. The votes should then be tallied and added together to give a class ranking of favored error correction types. (In this election, the lowest number wins.) Your database of teacher error correction preferences is in this way enlarged.

It would also be interesting to see how much variation in individual class member rankings there is. (We will be returning in Chapter 6 to a consideration of how such ranking data can be handled more formally.)

We are now going to look at a longer piece of teacher–learner interaction (Appendix 4.2 on pages 272–3). In this interaction, there are several different kinds of teacher IRF sets. These are usually teacher questions → learner errors → teacher error corrections.

Exercise 4.8

Singly or in pairs follow these steps:

1. Consider the teacher questions. (The transcript has at least six clear questions.) Decide if the teacher knew or did not know the answer to each question before she asked it. If you think the teacher knew the answer to the question, label the question as D (standing for display question). If you think the teacher did not know the answer to the question, label the question R (standing for referential question). (This distinction as applied to teacher questions in second language classes is discussed in detail in Long and Sato 1983). Discuss why you gave the questions the label you did.
2. Consider the learner errors. Identify each of these and label it as to type using the error categories listed above (phonological, morphological,

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For axiom 1
positive evidence was found by Rosenshine and Furst (1973), and
negative evidence is cited by Long (1983).

For axiom 2
positive evidence is offered by Schwartz (1986), and
negative evidence is cited by White (1991).

For axiom 3
positive evidence is given by Holley and King (1971), and
negative evidence is cited by Long (1984).

For axiom 4
positive evidence is given by Brock (1986), and
negative evidence is cited by Long (1984).

For axiom 5
positive evidence is reported by Seliger (1977), and
negative evidence is reported by Day (1984).

This is not to say that these axioms are bad, or incorrect, or useless as teaching principles. Nevertheless, it is true that such principles are often hard to confirm consistently in studies of what actually takes place in the classroom. As teachers know, there are complex interactions going on simultaneously in any classroom; neat answers are hard to find. Recently there has been growing reluctance among practitioners to prescribe and proscribe teaching practices. Good practice is held to be an individual matter directed by the specific content to be taught, by the beliefs, experience, and preferences of the teacher, by the situational context in which teaching occurs, and by the needs, interests, and personalities of the learners.

Johnson quotes Kent, a teacher-in-preparation who 'got the message' during his practicum experience:

> This experience [the practicum placement] has opened my eyes to some very different ways of teaching. I used to think that there must be one right way to teach and all I had to do was figure out the right way and then do it. I now see that there are lots of right ways. What makes it right depends on what students want and need, and that is always different. (Johnson 1995: 33)

This kind of open-ended view of teaching makes classroom interaction analysis somewhat problematical. What *is* good teaching and what kinds of interactions are we looking for in second language classes? It is important for researchers to be clear about their own tenets and candid in their reports about how such tenets shaped their research.

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Phase I: Develop a plan of action to improve what is already happening.
Phase II: Act to implement the plan.
Phase III: Observe the effects of action in context
Phase IV: Reflect on these effects

SIMULATED CLASSROOM DATA We have already looked at procedures for generating simulated classroom data when we asked you to generate and rank alternative techniques by which teachers correct learner errors. This is not as precise a method as classroom observation for examining how teachers actually correct student errors over a longish period of time, but it is considerably less taxing, and it does provide data that are interesting and useful for classroom practitioners.

STIMULATED RECALL is a technique in which the researcher records and transcribes parts of a lesson and then gets the teacher (and where possible, the learners) to comment on what was happening at the time that the teaching and learning took place. (Nunan 1989: 94)

Exercise 4.13

We are going to ask you to do a stimulated recall of a class period. You can use an upcoming class in which you are enrolled (maybe, a class in this course). If you are not enrolled in a class you may be able to use a movie or television class. The analysis will be similar. Using whatever data you can get, do the following:

1. Pick a period in the day when you have time and energy to do this, maybe with the foreknowledge of your teacher. It is useful to have a tape recorder running, to remind you later of what went on in class. In addition, set aside a piece of paper on which to make notes of what is going on in class. Try to note distinct sections of the class and some of the things you noticed that went on in each section. If a textbook was used, you can probably also use this as a guide to how the lesson was organized.
2. At the end of the day, replay the tape, go back over your notes, any text material used, and your own memory of the recently transpired events.
3. Describe briefly what went on in each segment of the lesson and your reaction to it. Your reactions might be to one of more of the following questions: Was the segment relevant? Did it relate to what went before and came after? Was the point of the segment made clear? Who participated in each segment and how? Was this segment of the lesson interesting, memorable?

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Table 4.7 Yucel's report of learner error-correction preferences
Error correction preferences of 22–25-year-old students N = 84

Example of teacher error correction	Type of correction	Number of Students
1 *Don't say go; say went.*	1 Negation	–
2 *I went to the cinema.*	2 Repetition with change	13
3 *Yesterday, I …*	3 Prompt	10
4 *Go is the present tense. You need the past tense here.*	4 Explanation	29
5 *What's the second word?*	5 Question	2
6 *Students?* (class gives answer)	6 Transfer	–
7 *Mmmmm* (disapproval)	7 Disapprove	–
8 *Please repeat the sentence.*	8 Repeat (explicit)	8
9 *What?*	9 Repeat (implicit)	–
10 *Again. Where did you go?*	10 Altered question	9
11 *Really? Which film did you see?*	11 Ignore	5
12 *When you went to the cinema, did you have a good time?*	12. Provide and expand	8

Yucel's questionnaire data on error-correction preferences of 22–25-year-old English language learners. (Context: same as Table 4.6.)

(Adapted from Yucel 2000: 150–1)

There are several interpretation issues that arise in trying to compare the data presented in Tables 4.5, 4.6, and 4.7. These issues involve comparing:

1 data from different learner/teacher populations
2 averaged and un-averaged teacher behavior counts
3 percentages and raw data
4 data using different systems of error correction classification
5 data from teacher behavior and learner-expressed preferences

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ment' (Vygotsky 1978). The developmental level of any student is what he or she can do alone; the proximal level is what he or she can do with supportive collaboration. The student–student interaction student interactions are said to have a higher probability of being 'developmentally appropriate' than teacher–student interactions may be.

Finally, language acquisition is underwritten by input received repeatedly from a variety of sources. 'Redundancy' is critical for language learning, and the cooperative learning group is a natural source of redundant communication. In small group discussions, students each use a variety of phrases providing the opportunity for the listeners to hone in on meaning as well as gain the repeated input necessary for learning to move from short-term comprehension to long-term acquisition. One summary of research in this area concludes that

> Language acquisition is determined by a complex interaction of a number of critical input, output, and context variables. An examination of these critical variables reveals cooperative learning has a dramatic positive impact on almost all of the variables critical to language acquisition. (Kagan 1995:1)

c) A number of those interested in first and second language reading (and writing) pedagogy have also adapted an interactional stance in regards to classroom instruction in literacy. Grabe (1988) posits a notion of interactivity in second language reading and makes a distinction between reading as an interactive process (interaction between top-down and bottom-up processing) and interactive models of reading (interaction between reader and author *as if* reader and author were engaged in a text-based conversation). One exercise favored in this approach to pedagogy has writers first construct a piece of prose argumentation as a two-person dialog before trying to put their argument into expository prose. Similarly, readers in the interactive mode are encouraged to direct questions to an author before beginning their reading, and then to search the text to see if their questions have been answered.

Exercise 4.16

We have mentioned several senses in which reading and writing have been considered interactively. However, some texts appear to be more interactive than others.

Below are two excerpts from school texts on American history. One was written by a history professor and text writer, Fremont P. Wirth (Sample A) and one by a novelist, Stephen Vincent Binet, under temporary hire as a writer of school history texts (Sample B). Compare the two texts and do the following:

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linguists, such as Hymes, Gumperz, Sinclair, and Coulthard. The widely influential model of *communicative competence* emerged from classroom interaction studies by socio-linguist Dell Hymes (1971), whose research concerns were largely directed towards the problems encountered by children from one cultural background who entered classrooms where communicative demands were defined primarily in terms of another. In a sense, then, critical aspects of the study of classroom interaction can be said to have been *home-grown*, to have been initiated and developed within the field of applied linguistics. Applied linguists writing on the subject of classroom interaction research continue to be widely read and cited by researchers from other traditions.

10 ***Context for many current controversies*** It may seem odd to cite 'controversy' as grounds for significance of an area of research. However, as Hammersley (1986: xii) notes, 'given its recent history, classroom research has been the site for some major theoretical and methodological debates'. These debates take place not only across disciplines, as might be expected, but also within disciplines where many key issues find focus in how classroom research is best done. Thus, educational psychologists, second language specialists, social anthropologists, linguists, sociologists, and ethnomethodologists all assert a multiplicity of views as to how classroom interaction research should be carried out both within their own areas of specialization as well as in the wider context of teaching and learning generally.

Exercise 4.17

Consider the above claims regarding the significance of classroom interaction research. Then do the following:

1 Pick three of these that you find interesting and/or compelling.

2 Jot down your reasons for selecting each of the three.

3 What insights have you had about classroom interaction that may be useful in your own teaching?

Summary

In this chapter, you have traveled the path of classroom research from your own experience as the participants being studied to your reflections on designing classroom interaction research studies of your own. You looked closely at two key areas of classroom interaction—the interaction between teachers and learners (when teachers correct learner errors) and the interaction between learners (when learners work in pairs carrying out a cooperative

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Once you have the information from a survey, what can you do with it? In parts of Chapters 2 to 4, you experienced ways of describing such characteristics in various qualitative ways. In this chapter, you will experience doing DESCRIPTIVE STATISTICS RESEARCH, that is, any research that describes a setting or events in numerical terms. This experience will also initiate you into the strategies and uses of QUANTITATIVE RESEARCH METHODS, which are any investigative procedures used to describe in numerical terms a setting and the things going on in it.

Experiencing descriptive statistics research

We will focus on a widely-used questionnaire survey designed to measure the belief systems of language teachers. Every teacher, whether trained or untrained, has ideas about how language teaching should be done. Even teachers who are completely untrained will have beliefs, perhaps based on their experiences as language learners (Brown 1995b: 4–5). Horwitz put it more negatively: 'Prospective foreign language teachers enter the methods class with many preconceived ideas about how languages are learned and how they should be taught. These beliefs can directly interfere with their understanding of and receptivity to the information and techniques presented in the methods class' (Horwitz 1985: 333).

Trained teachers are more likely to be aware than untrained ones of their options in language teaching. They may favor more innovative or up-to-date teaching methods like communicative and task-based techniques. Alternatively they may choose to be *eclectic* and combine features of grammar-translation, audiolingual approaches, the Silent Way, Community Language Learning, Suggestopedia, and Total Physical Response, as well as communicative and task-based techniques. (See Table 7.7 on page 214 for a list of the distinctive features of some of these methods and for more complete overviews, see Brown 1995b; Larsen-Freeman 2000; Oller and Richard-Amato 1983; Richards and Rodgers 2001.)

Williams and Burden take a different perspective in their 1997 book *Psychology for Language Teachers*. They suggest that, for language teachers to come to grips with what it means to be a good teacher, it may be relatively unimportant for them to learn about particular methods. Instead, it may be crucial for them to understand what their own beliefs are 'about themselves, about learning and its educational relevance and about learners' (Williams and Burden 1997: 63). Let's explore some of your language teaching beliefs in a few warm-up exercises.

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ISBN 0-19-437174-3

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