

AN INTRODUCTION TO SECOND LANGUAGE ACQUISITION RESEARCH

*Diane Larsen-Freeman
and Michael H. Long*



Applied Linguistics and Language Study

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An Introduction to Second Language Acquisition Research

Diane Larsen-Freeman and
Michael H. Long

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General Editor's Preface

Workers in the field of second language acquisition are now in the enviable position of having available to them in a readily accessible form a number of core texts which set out the parameters and the perceived objectives of their field of study. Journal articles and journals themselves abound, and the subject itself increasingly finds a place, not only in applied linguistics programs directed at language educators, but also in courses concerned with linguistic and psycholinguistic theory and even in other professional programs targetting, for example, the communicatively disordered and handicapped.

Given this availability, one might ask what new can be contributed at this time, even by a volume as this most comprehensive one by Diane Larsen-Freeman and Michael Long, to the *Applied Linguistics and Language Study* series. Their long-standing position and eminence as researchers in the field would be one argument, but there are two others, the one ineluctably connected to the other.

The first concerns the state of the art in second language acquisition theory and the second, not surprisingly, how we can enable more relevant and appropriate research in the field to be undertaken, by as wide a constituency as possible.

The general set of principles, predicting and explaining natural phenomena, is the objective of such a theory, like all theories. Second Language Acquisition theory, naturally enough, has particular requirements. They are essentially threefold: to explain the particular and variable capacity to acquire other languages (and, incidentally, to relate that capacity to the acquisition of a first language); secondly, to connect the capacity and the processes of second language acquisition to human cognitive capacities and processes in general; and, thirdly, to explain the relationship between acquisition and that which is being acquired, the content and the strategies inherent in the language object and the communicative process. Moreover, in the case of this last

requirement, to show how such acquisition proceeds cross-linguistically and the degree to which its path is governed by sets of universal possibilities and constraints generically inherent in the object of acquisition itself. A clear enough agenda: input, cognitive capacity, personality, output, not however independent constructs but interconnected and activated in social milieux which themselves have an advancing or delaying effect on this process. Furthermore, the relative weightings and salience of these constructs vary, not only among individuals but over the lifespan, and second language acquisition research in its legitimate progress towards the definition of its theory must always seek that parsimonious level of generality which will enable the most extensive explanation of data, while, of course, insisting on as broad a variety and range of that theory as possible. Parsimony is important: one may be forgiven in some currently available literature for coming to the conclusion that in some deeply unhelpful way, the potentially influencing variables affecting second language acquisition are so large in number, so relative and various in their potential salience, that the metaphor of interconnectedness that I drew up, has little practical explanatory value. Like many theories before it, in such a scenario second language acquisition theory would be vacuous in its own ornateness.

In short, the theoretical questions are still open, even though the ground has been partly cleared. Accordingly, any book (and this one in particular) which shows us the state of the terrain is of value, and one which examines these constructs and sets them out for the practitioner in a clear yet comprehensive way, is to be valued highly.

I referred earlier in this Preface to two arguments in favour of the existence of this book: what of the second? Theories need theoreticians, they need speculation, but they also require an empirical base. In some ways, the history of second language acquisition research provides a mirror to applied linguistics research more generally, especially in its struggle between a speculative and an empiricist persuasion. Such a struggle is evident both from the literature and from the practice of second language acquisition study and curricula. Often, one feels, the struggle is unhelpfully polarised, seeming to assert a primacy of one over the other, or even more foolishly, that one or the other protagonist is dispensable. The plain fact of the matter, of course, as with other disciplines and fields of inquiry, is that the two are bound, interdependent and both indispensable.

If this is so, then books which have an introduction to research at their masthead must weave a connection between these two persuasions and in an appealing and contingent manner. This Diane

Larsen-Freeman and Michael Long amply provide. The internal structure of the book has been precisely so constructed, culminating as it does with the question of the nature of theories in second language acquisition and how they may reveal themselves as relevant to the context of instruction.

The book begins with methodology, the how of research, both generally and with specific reference to second language acquisition data, targetting in particular interlanguage. Input and its environments constitute a central pivot for the book before the explanatory imperative for research is directed at the influencing variables on the nature, rate, success, and it must be said, the partiality of acquisition.

This latest contribution to the *Applied Linguistics and Language Study* series, like many of its companion volumes, has an instructional purpose. It is directed at the researcher-in-the-making and as such the authors have provided three valuable pieces of apparatus to facilitate this instructional purpose: the problematising questions directed at the issues of the relevant chapter, the activities designed to stimulate limited but nonetheless apposite reader research, and thirdly, possibly the most extensive bibliography of the field currently generally available. Of course, the field is large and its literature growing and prodigious, yet for that very reason we need an organisation and a point of reference to current practice: this is a central objective of this *Introduction*. At the same time, we need to show the way forward to an adequate theory and one which will be the intellectual property of the many, not the few; the democratisation of research into second language acquisition is a primary objective of the authors, myself as General Editor, and of the series itself.

Christopher N. Candlin
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Authors' Preface

Our primary aim in writing this book is to introduce readers to research on second language acquisition (SLA). The field is a broad one, and this is reflected in our focus on naturalistic and instructed learning by children and adults, as individuals or groups, in foreign and second language settings.

We have not assumed any prior knowledge of SLA or of SLA research methodology, although some background in language analysis would be helpful. We hope that after completing the book, readers will have become interested enough to delve further into the literature and perhaps even to embark on research of their own.

In Chapter 1 we explain why we think SLA is worth investigating. The methodologies which researchers employ to carry out their work are the subject of Chapter 2. We hope our discussions of the strengths and weaknesses of each methodology will help demystify the research process for readers who have never conducted research themselves. In Chapter 3 we trace the historical development of the field, noting how different data analysis procedures evolved, with each successive type of analysis reflecting a new stage of awareness of what SLA entails. Substantive findings from research to date are detailed in Chapter 4.

After describing SLA and how researchers study it in Chapters 1 through 4, the rest of the book deals explicitly or implicitly with current explanations of the learning process and the search for better ones. This leads us to consider environmental factors, learner differences, the nature of language and the role of instruction. It also means we need to think about forms and functions of theories in social science in general and about some theories of SLA in particular.

Given that learning is an internal process which cannot be observed directly, researchers must make inferences as to the nature of the process in part from an analysis of the product, learner language. In order to improve the quality of these inferences, it is useful to examine

the nature of the second language input, something we do in Chapter 5. Since learners vary widely in how successful they are – one of the more obvious differences between first and second language acquisition – we deal in Chapter 6 with learner variables and differential achievement. In Chapter 7 we examine the value of theory in general, and then evaluate some representative SLA theories. Finally, in Chapter 8, we give particular attention to the differences between naturalistic and instructed SLA, and attempt to identify contributions made by language teaching.

In all this, we strive for comprehensiveness but must sometimes make what we hope are forgivable compromises. Two compromises we should acknowledge right up front: we have not reviewed the research literature in the acquisition of specific skills such as reading and writing, nor have we probed in depth acquisition of all the linguistic systems. Thus far, SLA research has primarily concentrated on explaining the acquisition of morphosyntax; the acquisition of phonology, the lexicon and pragmatics have gotten rather short shrift, an imbalance reflected in our text.

The book is intended to be suitable for individual study and for basic literature survey courses in SLA of the kind now common in graduate programmes in TESL, foreign language education and applied linguistics. Since students in such courses are typically required to pursue one or more topics in greater depth, e.g. through a literature review and/or a data-based study of their own, we have made a point of supplying more than the usual number of bibliographic references. These are included in the main body of the text to support generalizations, but also at the end of each chapter as suggestions for further reading. Based on our experience as instructors of SLA courses, this should provide students with easy access to the literature and so save them and their teachers long hours searching libraries and memories.

At the end of each chapter, we have also included activities of two types: the first so that readers can test their comprehension of what they have read, the second so that they can apply what they have learned, and thereby experience what it is like to conduct SLA research and begin to develop the appropriate design and analytic skills. We have found the 'Application' activities to improve critical reading skills for consumers of research articles and in some cases also to serve as a bridge to full-fledged research efforts by readers themselves. Even when that is not the purpose, however, we hope that doing the comprehension and application activities will foster a greater awareness and appreciation of the SLA process.

There are several people whose contributions to this book we would like to acknowledge. We alphabetize their names, as we did our own names as authors. We are very grateful to:

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1 Introduction

1.1 The place of second language in the world today

What comes to mind for many people when they encounter the phrase ‘second language acquisition’, is the experience they had as school students when they were engaged in the study of one or more foreign languages. Second language acquisition, however, occurs in other forms in schools today as well. Bilingual education, for example, has been a reality in many parts of the world for years. There are several models for bilingual education programmes, but generally they exist for the purpose of helping students to maintain their native language or to continue to grow in their native language while acquiring a second language.

Another form of second language acquisition in an educational context is the immersion programmes popular in Canada and certain parts of the United States. In these programmes, native English-speaking children receive all of their initial instruction in a second language. After the early grades, more and more content courses are taught in the native language.

The acquisition of second languages in a formal school setting, however, is not the only context where second languages have their place in the world today. English, a second language for most of the people of the world, has increasingly become the international language for business and commerce, science and technology, and international relations and diplomacy. Other professional intercourse, such as the proceedings of meetings of health practitioners or educators from many different parts of the world, is often conducted in English, a second language for many of the participants. In fact, it has been estimated that although there are only 325 million of the world’s 4.7 billion population who speak English natively, for as many as 1.4 billion additional people, English is an official second language (Crystal 1985).

Another example of second language use linked with occupations is the *gastarbeiter* or migrant worker situation in Europe. In recent years, 11 million workers, primarily from Greece, Spain, Italy and Turkey,

have left their homes and families to seek employment in the industrialized Western European countries. The migrant workers typically do not speak or understand the language of their new environment when they arrive. This has made for a number of social problems in the host community. It has also afforded a unique opportunity for SLA researchers to study what language is acquired, research about which we will learn more later.

What distinguishes the foreign workers from other migratory populations is that the former for the most part have no intention, initially at least, of residing in the host countries for the rest of their lives. Thus, another instance where second language acquisition becomes an issue is the arrival and assimilation of immigrants. In the 1980s this was brought to mind by the large influx of Indochinese refugees to many different countries around the world.

Second languages frequently enter into consideration in affairs of state. Bitter contests have been fought in multilingual societies over national language policy formulation: Which languages are to be accorded official recognition and which denied it? Which language(s) is to be the medium of instruction in school and which language(s) is to be taught as a second language? And, of course, these same decisions often apply to dialects as well. Many children of the world grow up speaking a 'dialect' at home, only to encounter their national language for the first time as they enter school.

In short, not only do second languages have a place in school, they also affect many other aspects of people's lives. In the interdependent world of today, second language acquisition and use are ubiquitous.

1.2 Why study second language acquisition?

There are almost as many reasons to study SLA as there are places where second languages are acquired and used. First of all, the study of SLA is fascinating in its own right. It is a true conundrum. Understanding it requires drawing upon knowledge of psychology, linguistics, sociology, anthropology, psycholinguistics, sociolinguistics and neurolinguistics, among others. As David Cook (1965) has said:

We sometimes overlook the fact that there is much that we can know and need to know about our universe and ourselves that is not necessarily useful at the moment of discovery. By the same token, we are too prone to reject knowledge for which we cannot find an immediate practical application.

Yet much of what those who apply knowledge have discovered in their practical pursuits was made possible by those who were

only pursuing knowledge for its own sake. In an ultimate sense all knowledge is practical. (p. 9)

But there is more to be gained from grappling with the complexity of SLA than the sating of intellectual curiosity. The most obvious beneficiary of an increased understanding of SLA is the second language teaching profession, and through the teachers, the learners themselves. Indeed, many researchers have been or remain language teachers who find themselves attracted to SLA research as a source of insight into the teaching/learning process. As Corder (1981, p. 7) puts it, 'Efficient language teaching must work with, rather than against, natural processes, facilitate and expedite rather than impede learning.' This can happen best when we know what those natural processes are.

Indeed, we have found it helpful to depict the central players, processes and content in the language teaching field as a triangle. As the Figure 1.1 implies, we believe that language teachers' decisions about the teaching process should, to a large extent, be informed by knowledge of the subject matter they are teaching (i.e. the target language and culture) and by knowledge of the unique group of learners with whom they are working and of the language-learning process. It is the lower right angle of the triangle with which we are concerned in this book.

Teachers' expectations about what SLA research can tell us at this point must be modest, though. As Lightbown (1985) reminds us, at the moment SLA research does reveal to a certain extent what learners do and what they know. It has not yet, however, reached the point where

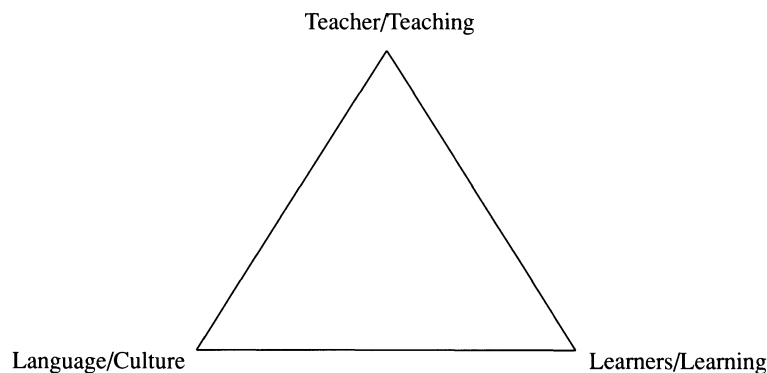


FIGURE 1.1

we can say with assurance how they have come to do and to know these things, and we are further still from saying what teaching practices should therefore follow. On the other hand, if our research leads to greater teacher awareness of the acquisition process and increased sensitivity towards learners, then it seems to us the effort has been worthwhile.

Then, too, although we have no independent evidence to corroborate their claim, second language learners who have studied SLA research report anecdotally that their awareness of the SLA process facilitates their subsequent attempts at language learning. Clearly a heightened understanding of second language acquisition could also have impact on the other educational programmes involving language acquisition, such as bilingual education and immersion programmes.

But there are other, less obvious areas for which an understanding of SLA may prove helpful. One such example is with certain populations which have specific language-learning needs. For instance, language intervention issues for mentally retarded individuals parallel second language teaching issues to a striking degree (see, for example, Rosenberg 1982). Diagnosing non-native speaking children's learning disabilities as distinct from their second language problems is another example. Facilitating the acquisition of a spoken language by deaf individuals already fluent in sign language is yet a third. Many other potential applications could be cited here.

Mention was made earlier about how knowledge of certain disciplines helps us to understand the SLA process better. Ideally SLA research can and should inform these disciplines as well. SLA provides a good test case for linguists' claims about language universals, and for psychologists' observations on individual learning style differences. It also provides fertile ground for anthropologists' exploration of cultural universals and for sociologists' study of the effect of group membership on task achievement. Psycholinguists should be able to use SLA research findings in order to address a perennial problem for them: how to sort out the effects of cognitive development from normal child language development. Sociolinguists should find second language acquisition research helpful in expanding their understanding of when speakers prefer one speech style over another. Neurolinguists will find that SLA evidence can be brought to bear on issues in human biological development. For example, is there such a thing as a critical period in an individual's development, beyond which it is very difficult or impossible for anyone to truly master something as complex as a second language? These are but a few of the issues which SLA research should shed some light on in these related disciplines.

1.3 Development of the field of study of second language acquisition

People have been interested in second language acquisition since antiquity, but in modern times much of the research emphasis was in fact placed on language *teaching*. Large comparative studies of language teaching methods were conducted. Less ambitious studies focused upon the most efficacious way to teach a particular skill or to sequence structures in a syllabus. The assumption seemed to be that if language teaching methods could be made more efficient, then learning would naturally be more effective.

This assumption may be perfectly valid; indeed, interest in improving language teaching methodology has not diminished. Nevertheless, in the 1960s, as a result of the inconclusive findings from the comparative studies, a debate in psychology over the nature of learning and a revolution in linguistics, a challenge to the dominance of research on language teaching was to take place. Although we will discuss in Chapter 3 the precise nature of this challenge and its implications for second language acquisition, suffice it to say here that for the first time in recent history, many researchers' attention was shifted from the teaching process to the learning process.¹ It was this shift in perspective which introduced a new research agenda and gave definition to the field that has come to be known as second language acquisition.

A dramatic illustration of the results of this perspective shift can be found by simply glancing at the table of SLA studies compiled by Hatch (1978c). Hatch lists only seven studies prior to 1965. Subsequent to this date, there are scores of studies, the mere listing of which consumes almost seven pages. And Hatch's book was published in 1978. Since then there have been hundreds more studies conducted, several new journals begun, and numerous conferences convened.

Raimes (1983) offers an additional indicator of the birth and growth of the SLA field. She conducted an analysis of the topic index of articles which appeared in the *TESOL Quarterly* from 1967 to 1980. For the ten-year period 1967–76, Raimes found 29 articles listed under the topic heading 'second language learning'. Compare this with the 24 articles she counted for the two years 1979–80 in a topical area which was renamed second language acquisition – a four-fold growth! Given the vitality of the field today, it seems prudent to pause here to take stock of twenty years² of SLA research and to see where we have been and where we are going.

1.4 The scope of second language acquisition research

Focusing research efforts on the learner and learning process has not meant ignoring the effect of instruction on SLA. On the contrary, one of the fundamental goals of SLA research is to facilitate and expedite the SLA process, and appropriate instruction will undeniably make a contribution. Indeed, there is a group of SLA researchers whose special interest is in conducting classroom-centred research.³

Having said this, it is also true that the scope of research has broadened considerably from being solely concerned with what takes place in the classroom. In fact, much of the research these past twenty years has been conducted on SLA in a natural, that is untutored, environment. Sometimes a distinction is made between second language learning which takes place within a classroom and second language acquisition which occurs 'naturally' outside a classroom. We discuss the difference between learning and acquisition in Chapter 7 but prefer to follow most researchers in the field and use acquisition as the superordinate term for all settings. We do, however, retain the traditional term 'learners' to refer to those in the process of acquiring a second language.

A somewhat related matter having to do with setting is that researchers must be able to explain SLA whether the acquisition takes place in a second language or a foreign language environment. A second language is one being acquired in an environment in which the language is spoken natively. For example, a Spaniard acquiring English in England would be acquiring it as a second language. If he or she were studying English in a classroom in Spain, i.e. outside of an environment where the second language is spoken natively, he or she would be acquiring it as a foreign language. In which environment the acquisition takes place is often related to the first variable, whether it takes place in a classroom or not, since foreign languages usually require instruction whereas second languages can often be 'picked up' from the environment. In the second language acquisition field, however, and therefore in this book, we refer to both as instances of second language acquisition, taking up the differential effects of the two settings in Chapter 8.

In addition to setting variables, SLA research must account for learner variables. Age is an example of one such learner variable. The only thing that calling a language 'second' implies is that it is acquired later than a first language. Consequently, SLA research must account for the acquisition of a second language by young learners who may have very little proficiency in their native language, up to

the acquisition of a second language by an older learner for whom the native language is very well established. Of course, there are many other learner variables besides age which affect the acquisition process. We will deal with a number of these in Chapter 6.

Even the term 'second language' is not as straightforward as it first seems, as sometimes it refers to a language which is not chronologically the second. SLA really has come to mean the acquisition of any language(s) other than one's native language. Thus, we have 'second' language acquisition studies dealing with the acquisition of third and fourth languages, and we even have 'second' language acquisition case studies of simultaneous bilingualism which in reality are studies of children engaged in learning two first languages.

What complicates our study further is that learners acquire language for a variety of reasons: to fully participate in a society, to travel as a tourist, to pass an examination, to obtain employment, to read scientific texts, etc. It won't do to say glibly that linguistic or communicative competence is what everyone aspires to because, first of all, not all do and second, as McGroarty (1984) reminds us, communicative competence can mean different things for different people.

In sum, the scope of SLA research must be sufficiently broad to include a variety of subjects who speak a variety of native languages, who are in the process of acquiring a variety of second languages in a variety of settings for a variety of reasons. Small wonder Seliger (1984) states unequivocally that it is impossible to describe all the variables in SLA. Nonetheless, Seliger also notes: 'In spite of such infinite diversity there exists the universal fact that human beings of all ages, attitudes, levels of intelligence, socioeconomic background, etc., succeed in acquiring L2s⁴ in a wide variety of both naturalistic and formal settings' (p. 37). It is to understand how learners accomplish this and why some fail to do so which has motivated SLA research since its inception twenty years ago.

Notes

1. We say recent history because as Stern (1983) has rightfully pointed out, modern SLA researchers were not the first to discover the SLA learner. Indeed, even though most of the research in the pre-SLA period was devoted to the teaching process, there was some work being done on learner characteristics. Carroll (1963) discusses some of the studies on the relationship between interests, attitudes, motivation, prior language training, age and sex of the learners on the one hand, and their second language achievement on the other.

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2. Most researchers date the beginning of the SLA field with Corder's article 'The significance of learners' errors', published in 1967, or Selinker's 'Interlanguage', published in 1972. More will be said about these later.
3. Saying that we have not ignored classroom instruction because there exists a group of researchers interested in classroom-centred research (CCR) is a bit misleading. The goal of CCR researchers is to describe classroom processes, not to prescribe instructional techniques (Allwright 1983, p. 196).
4. L2 and L1 are used as abbreviations for second and first languages, respectively.

Activities

Comprehension

1. Of what value is the study of second language acquisition to language teachers, according to the text?
2. It was said in this chapter that the perspective shift which occurred towards the end of the 1960s brought about a new focus on the learner. What does this mean?
3. Why do you think Seliger says it is impossible to describe all the variables in SLA?

Application

4. A number of ways that people come into contact with second languages were suggested in this chapter. Can you think of any others?
5. Can you think of any reasons for why one should study SLA research in addition to the ones proposed here?
6. Find out if your country has a national language policy. If it does, are there any officially recognized second languages? How are these dealt with in the educational context?
7. Make a list of questions you have about the SLA process. Although we do not promise answers for all, or even any, of them, making a list will help you to identify gaps in your knowledge and will provide you with an initial framework from which to organize what you encounter in subsequent chapters. As you continue to read, this framework, no doubt, will have to be refined.

Suggestions for further reading

We have touched upon a number of different areas in this chapter which we will be unable to pursue in detail since they are beyond the scope of this book. Interested readers may wish to consult the following:

For information on bilingual education, see:

- Cummins, J and Swain, M 1986 *Bilingualism in education*. Longman
 Paulston, C 1980 *Bilingual education: theories and issues*. Newbury House Publishers, Inc., Rowley, Mass.

For an overview of immersion programmes, see:

- Genesee, F 1983 Bilingual education of majority-language children: the immersion experiments in review. *Applied Psycholinguistics* 4: 1-46
 Genesee, F 1987 *Learning through two languages*. Newbury House Publishers, Inc., Rowley, Mass.
 Swain, M and Lapkin, S 1982 *Evaluating bilingual education: a Canadian case study*. Multilingual Matters Ltd.

For a look at the teaching of English as an international language, see:

- Bailey, R and Gorlach, M (eds.) 1984 *English as a world language*. Cambridge University Press
 Kachru, B (ed.) 1982 *The other tongue: English across cultures*. University of Illinois Press, Urbana, Ill.
 Strevens, P (1980) *Teaching English as an international language*. Pergamon Press

For information on national language policy, see:

- Olshtain, E 1985 Language policy and the classroom teacher. In Celce-Murcia, M (ed.) *Beyond basics: issues and research in TESOL*. Newbury House Publishers, Inc., Rowley, Mass.
 Povey, J (ed.) 1980 *Language planning and language teaching: essays in honor of Clifford H. Prator*. English Language Services, Culver City, Calif.

For a discussion of the interaction between language acquisition research and populations with specific language learning needs, see:

- Cummins, J 1984 *Bilingualism and special education: issues on assessment and pedagogy*. Multilingual Matters Ltd.
 Strong, M (ed.) 1988 *Language learning and deafness*. Cambridge University Press

For a discussion of how various related disciplines have contributed perspectives to SLA research, see:

- Beebe, L (ed.) 1988 *Issues in second language acquisition: multiple perspectives*. Newbury House/Harper and Row, New York

2 Second language acquisition research methodology

2.1 Introduction

‘Research is a systematic approach to finding answers to questions’ (Hatch and Farhady 1982, p. 1). Part of being systematic is having a well-planned research design. In this chapter we will see how the SLA field has come to deal with four aspects of research design: the methodology, the setting, the instrumentation and measurement.

In the previous chapter it was mentioned that much of the research in the 1960s comparing language teaching methods was inconclusive and thus unable to quell methodological disputes. At the same time a debate was also ensuing between cognitive psychologists and behaviourists as to the character of human learning. (See, for example, MacCorquodale’s 1970 rebuttal of Chomsky’s review of *Verbal Behavior* by B. F. Skinner.) Things were no more settled in linguistics, which was itself in an upheaval due to the Chomskyan revolution. It therefore became increasingly apparent to certain European and North American researchers that they could no longer rely on other disciplines for theoretical orientations, but would have to research SLA directly and empirically themselves (Stern 1983, p. 329).

Since SLA was a new, uncharted field, it was by no means obvious how such investigation ought to be conducted. Many of its original research methodologies were consequently borrowed from first language acquisition research. Still others have come from education and the related disciplines mentioned earlier. As their experience grows, however, SLA researchers are becoming more creative in the ways they seek answers to questions in their unique field of specialization.

2.2 Qualitative versus quantitative methodologies

Today it is fair to say that SLA has a varied inventory of methodologies with which to deal with questions, although the methodologies are by no means universally endorsed. Indeed, there is an oft-cited schism

in the SLA field between those researchers who favour qualitative methodologies and those who prefer quantitative methodologies. The prototypical qualitative methodology is an ethnographic study in which the researchers do not set out to test hypotheses, but rather to observe what is present with their focus, and consequently the data, free to vary during the course of the observation. A quantitative study, on the other hand, is best typified by an experiment designed to test a hypothesis through the use of objective instruments and appropriate statistical analyses.

For some researchers the distinction between the two represents more than a preference between two types of methodologies; rather it represents a fundamental clash between two paradigms. As Rist (1977) explains: 'Ultimately, the issue is not research strategies *per se*. Rather, the adherence to one paradigm as opposed to another predisposes one to view the world and the events within it in profoundly different ways' (p. 43).

Reichardt and Cook (1979, p. 10) provide a useful summary of the attributes of the qualitative and quantitative paradigms (Table 2.1). As Reichardt and Cook point out, there are two implications for research which relate to this summary. First, it is assumed that if researchers subscribe to one paradigm over the other and thus view the world differently, they must use different methods of inquiry. Second, the paradigms are assumed to be inflexible so that one's only choice is between the two. We find these assumptions to be unjustified. By considering an oft-discussed methodological distinction in the SLA literature, we will demonstrate that the paradigm attributes are not logically linked to one methodology. The distinction we have chosen to exemplify is the one between *longitudinal* and *cross-sectional* studies.

A longitudinal approach (often called a case study in the SLA field) typically involves observing the development of linguistic performance, usually the spontaneous speech of one subject, when the speech data are collected at periodic intervals over a span of time. In a cross-sectional approach, the linguistic performance of a larger number of subjects is studied, and the performance data are usually collected at only one session. Furthermore, the data are usually elicited by asking subjects to perform some verbal task, such as having subjects describe a picture.

Even from these brief descriptions, we can see that each approach is more compatible with one paradigm than the other. The longitudinal approach could easily be characterized by at least three of the qualitative paradigm attributes: naturalistic (use of spontaneous speech), process-oriented (in that it takes place over time) and ungeneralizable

<i>Qualitative Paradigm</i>	<i>Quantitative Paradigm</i>
Advocates the use of qualitative methods.	Advocates the use of quantitative methods.
Phenomenonism and verstehen: 'concerned with <i>understanding</i> human behavior from the actor's own frame of reference'.	Logical-positivism: 'seeks the <i>facts</i> or <i>causes</i> of social phenomena with little regard for the subjective states of individuals'.
Naturalistic and uncontrolled observation.	Obtrusive and controlled measurement.
Subjective.	Objective.
Close to the data; the 'insider' perspective.	Removed from the data; the 'outsider' perspective.
Grounded, discovery-oriented, exploratory, expansionist, descriptive, and inductive.	Ungrounded, verification-oriented, confirmatory, reductionist, inferential, and hypothetico-deductive.
Process-oriented.	Outcome-oriented.
Valid; 'real', 'rich', and 'deep' data.	Reliable; 'hard' and replicable data.
Ungeneralizable; single case studies.	Generalizable; multiple case studies.
Holistic.	Particularistic.
Assumes a dynamic reality.	Assumes a stable reality.

TABLE 2.1 Attributes of the Qualitative and Quantitative Paradigms

(very few subjects). The cross-sectional approach is easily recognizable from the corresponding attributes of the quantitative paradigm: obtrusive, controlled measurement (use of artificial tasks), outcome-oriented (in that it takes place at only one point in time) and generalizable (larger group of subjects). Upon reflection, however, we realize there is nothing inherent in either approach to prohibit its being practised in a way consistent with the alternate paradigm.

There is no reason, for example, why the natural linguistic performance data obtained through a longitudinal study could not be supplemented by data elicited by some controlled, 'obtrusive' verbal task. Indeed, specific hypotheses generated by an analysis of the natural data are sometimes concurrently tested by means of data collected through elicitation procedures. (See, for example, Cazden et al. 1975.) Moreover, quantifying the data obtained by either means is standard practice in SLA.

The process-oriented versus the outcome-oriented distinction should not be associated exclusively with one approach versus the other, either. It is true that in order to study the SLA process we must be able to trace changes diachronically, or over time, which would seem to suggest the adoption of a longitudinal approach, i.e. one which would allow the researcher to trace the process, not just analyse the product or outcome at any one point in time. However, a synchronic cross-sectional study can be designed in such a way as to emulate the diachronic process of SLA. If the subjects represent a range of language proficiencies, then it is assumed that their aggregate performance at a single point in time will reflect a developmental picture similar to that obtained by a researcher studying the second language development of a single subject over time.¹

A combination of longitudinal and cross-sectional approaches is also possible. Dato (in Adams 1978), for instance, designed a study of the acquisition of Spanish by English-speaking children using three groups of English speakers with varying levels of exposure to Spanish (Table 2.2). At the start of study, Group (a) had been exposed to Spanish for one month, whereas Group (c) had had three months of exposure. Dato collected data four times from each of the three different groups. The data collected at any one time constitute a cross-sectional study, while all the data for a particular group provide a longitudinal view. The data

		<i>Data collection times (months)</i>			
	<i>Group</i>	<i>Time 1</i>	<i>Time 2</i>	<i>Time 3</i>	<i>Time 4</i>
English children's length of exposure to Spanish	a	1	2	3	4
	b	2	3	4	5
	c	3	4	5	6

TABLE 2.2 A Longitudinal/Cross-Sectional Research Design

from all three groups offer a basis for cross-checking generalizations on both the outcome at any one time and of the process over time.

The third attribute cited above was the alleged lack of generalizability of findings from single-case longitudinal studies. It is commonly acknowledged that a difficulty with single case studies is discerning typical SLA behaviour from what is unique to the individual subject. Once again, however, there is nothing inherent in either approach to warrant the imposition of such a rigid distinction. One solution to the lack of generalizability is to conduct a number of concurrent longitudinal studies. This would help in distinguishing the typical from the idiosyncratic, although admittedly such an undertaking might be prohibitively time-consuming. Alternatively, the findings from a number of independent longitudinal case studies might be aggregated.²

Moreover, generalizability is not only dependent upon the number of subjects in a study. Even researchers using a cross-sectional study cannot legitimately generalize beyond the subjects they have studied unless the subjects are drawn from a particular population in a random manner – and even then the sample data must be generalized to the population based on proper statistical reasoning.³ Usually, random selection is not possible and any generalizations drawn are tentative at best. Then, too, as Reichardt and Cook (1979) add: ‘While a large and diverse sample of cases can aid in such informal generalizations, so can a depth of understanding of a single case’ (p. 115).

From the preceding discussion of paradigm attributes, it can be seen that the longitudinal or cross-sectional approach should not be associated exclusively with either paradigm. This is not to say that one’s paradigmatic allegiance is unimportant in designing a methodology; nor is it to deny that certain methodologies are usually associated with specific paradigms. The point is that what is important for researchers is not the choice of *a priori* paradigms or even methodologies, but rather to be clear on what the purpose of the study is and to match that purpose with the attributes most likely to accomplish it. Put another way, the methodological design should be determined by the research question. Nevertheless, as we have said, because extant methods consist of particular clusters of attributes, they are commonly associated more with one paradigm than the other. For the sake of convenience, then, we will introduce them within a paradigmatic context. In keeping with our point that the dividing line between the paradigms is not rigidly fixed, however, we introduce the methods arranged along a continuum with the two paradigms at either pole (Figure 2.1).

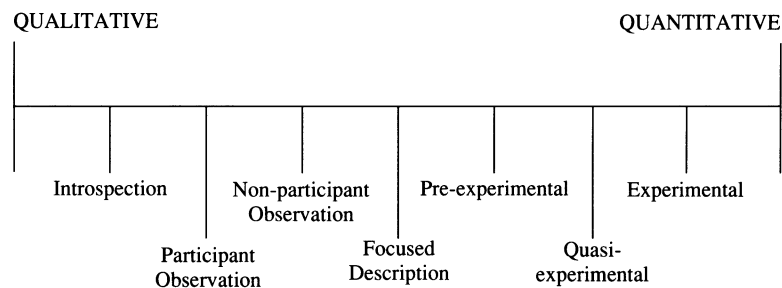


FIGURE 2.1 Qualitative-Quantitative Continuum of Research Methodologies

2.2.1 Introspection

Perhaps the ultimate qualitative study is an introspective one, in which, with guidance from the researcher, learners examine their own behaviour for insights into SLA. Although there is some question about the validity of such self-report data, using introspection as a research method is an old tradition in psychology (see, for example, Titchener 1912).

SLA researchers who challenge the validity of introspective insights do so because they question whether learners' reports of what they are experiencing truly represent what is transpiring within the learner (Seliger 1983). They suggest that introspection be limited to the study of affective factors such as attitudes and motivation. Others, however, argue that observation by the researcher cannot provide access to learners' conscious thought processes (Gaies 1983). In support of this argument, O'Malley et al. (1985a) in their study of learning strategies discovered that they had considerable success in identifying learning strategies when they interviewed the learners themselves; however, they had less success when they interviewed the learners' teachers and very little success in identifying strategies based on the researchers' own observations.

2.2.2 Participant observation

In participant observation, researchers take part in the activities they are studying. They do not approach the study with any specific hypotheses

in mind; rather they take copious notes on whatever they observe and experience.⁴ The notes are usually recorded immediately after the activities so as to allow the researchers full participation in them. The period of observation is usually long and the number of subjects studied is small.

In an SLA context, an example of a research project carried out using this methodology is K. M. Bailey's study (1980) of her experience as a student of French. The data from the study were collected by means of diary entries recorded by Bailey during her French course. The entries consisted of observations of her fellow students and the teacher. There also were introspective comments since Bailey scrutinized her own experience as well. The positive qualities and the limitations of this type of study will be discussed below.

2.2.3 Non-participant observation

As with its participant counterpart, researchers engaged in non-participant observation do not entertain any hypotheses at the outset of a study. As the name implies, the researchers observe activities without engaging in them directly. This leaves them free to take notes and/or make tape recordings during the observation itself. As with participant observation, the subjects are usually few in number and the period of study relatively long.

In the SLA field, non-participant observations are usually referred to as longitudinal case studies, the classic example being Leopold's study of his daughter's simultaneous acquisition of English and German during the period 1939–49. Leopold made a daily record of his observations, resulting ultimately in a monumental four-volume work. (See a summary in Hatch 1978c.)

Both participant and non-participant observation have many positive qualities to recommend them as research methodologies. Researchers using these methods provide us with a detailed and comprehensive description of subjects' SLA behaviour. Furthermore, such descriptions are psycholinguistically coherent in that they deal with a single subject's development (or only a few subjects' development) over time. Since there are no *a priori* hypotheses to be tested, researchers' attention is freed to discover any potential factors which could significantly influence the SLA process. In fact, such studies are often referred to as hypothesis-generating, since the scope of researchers' perspectives is not restricted – they can look for patterns in naturally occurring data and, once detected, generate hypotheses which might account for them.

There are, however, limitations to these research methodologies. It can seriously be questioned as to whether data gathered in observational studies are in fact natural. Tarone (1979), citing 'the observer's paradox' (Labov 1969), argues that the mere presence of an observer will force the subjects to attend to what they say in a way different than if the observer were not present. It is also not really true to say that the scope of such research is unlimited. The scope is going to be restricted since the observation is being conducted by human beings who are more or less perceptive, more or less biased, more or less objective, more or less experienced, etc. Moreover, in participant observation the scope will be limited by the fact that even the most perceptive researchers' attention is going to be divided between participating in the activities and observing themselves and others while doing so.

Another drawback to these observational studies is that they usually take a long time to complete. Even when they are completed, the researchers will be unable to generalize from their findings. It is impossible to sort out the typical from the unique.

2.2.4 Focused description

Further along the continuum we find focused descriptive studies. These studies are similar to the observational studies just considered since they, too, are descriptive in nature. The difference between them, however, is that researchers who use a focused descriptive methodology do so because they wish to narrow the scope of their study to a particular set of variables, a particular system of language (e.g. morphology) or to explore a particular issue (e.g. the influence of the native language on SLA). According to Van Dalen (in Cook 1965), 'Descriptive studies may classify, order and correlate data seeking to describe relationships that are discoverable in phenomena themselves' (p. 39).

Examples of focused descriptive studies in an SLA context which seek to classify data are those that use interaction analysis. In interaction analysis studies, researchers observe a language class using a data-collection device or instrument to focus and record their observations. The instruments contain pre-established categories of behaviour (e.g. teacher addresses a question to particular students; teacher addresses a question to group as a whole, etc.). Often what is required of the researchers is for them to make a tally next to the category of behaviour when they observe it happening. Specific examples would be FOCUS (Foci for Observing Communication Used in Settings) (Fanselow 1977) and COLT (Communicative Orientation of Language Teaching) (Allen, Fröhlich and Spada 1984). The purpose

of these instruments is to classify the communications people send and receive. Questions are addressed such as who talked in the classroom and to what extent.

An example of a focused descriptive study which seeks to order data is Dulay and Burt's (1974) study of morpheme acquisition. These researchers used a cross-sectional approach and an instrument (the Bilingual Syntax Measure) to obtain samples of speech performance in children. They then scored the children's speech for morpheme suppliance. On the assumption that the morphemes which were the least often supplied were the last to be acquired, they determined an order of morpheme acquisition for their subjects. We will discuss this study and others like it more fully in Chapter 4.

Focused descriptive studies which are correlative in nature seek to determine if two phenomena are related, and if so, the degree to which they are. As applied to an SLA context, the usual procedure is for researchers to use instruments to measure certain learner characteristics (e.g. motivation) or characteristics of the learning environment (e.g. amount of native-speaker input) and to correlate these with the learners' second language proficiency. An example of such research is Gardner and Lambert's (1972) study of the relationship between learners' motivation and their second language proficiency. A different form of this procedure has been used by classroom researchers, such as Politzer (1977), where what are correlated with students' second language achievement are frequencies of teacher or student behaviours.

The fact that these descriptive studies are focused is both an advantage and a disadvantage. What is advantageous is that the scope of the researchers' task is limited: they are not burdened with trying to explain all aspects of second language acquisition simultaneously. Furthermore, once the focus has been established, it is maintained; it does not shift according to the fancies of the researchers. As a natural consequence of these two points, focused descriptive studies are usually less time-consuming than open-ended observational studies, so more of them can be conducted and more subjects can be observed in any one study. Although we have already mentioned that generalizability is not strictly dependent upon the number of subjects in a study, it is also true that researchers can feel much more confident about the generalizability of their findings if they hold for a group of subjects as opposed to a few individuals.

The focus of this type of study can also be disadvantageous, however. Limiting the scope of the research ignores the fact that SLA is a multi-dimensional phenomenon. It is reasonable to question whether findings that result from a focused study will hold when the full context

of SLA is restored. Because of the complexity of SLA, it is unlikely that a single isolated factor will be powerful enough to show a relationship to learner success among all learners and in all situations.

The use of an instrument helps to standardize researchers' observations, allowing one to compute the inter-rater reliability of the observations, the degree to which the researchers agree on what they have observed. It also allows researchers to easily compare results from one study to the next. These are very important in observational studies. On the other hand, the use of an instrument precludes the researchers' investigating categories of behaviour apart from those the instrument describes. Whether or not the categories in the instrument are the important ones is also subject to question. They can be just as biased, of course, as a researcher's notes taken during a non-participant observation.

The use of instruments to elicit learner behaviour or measure learner characteristics in the focused studies described above by Dulay and Burt (1974) and Gardner and Lambert (1972) also has its advantages and disadvantages. We will discuss the former in Section 2.4 below and the use of self-report data in the latter in Chapter 6.

2.2.5 Pre-experiment

So far we have been reviewing methodologies that result in descriptions of the SLA process. Researchers who use these methodologies set as their goal understanding the SLA process. True experiments differ in that the goal of researchers using them is to predict and explain human behaviour (Ochsner 1979). As we move along the continuum, we encounter several research designs that approximate, to an increasing degree, true experiments. In a true experiment, researchers attempt to establish a causal relationship between some treatment and some consequence. For example, if we were conducting an experiment in a language classroom, the treatment might be some particular error-correction strategy, and the consequence might be the eradication of certain errors in learners' spoken performance. In order to establish such a relationship in a valid manner, two criteria must be satisfied: (1) there must be experimental and control groups, i.e. groups distinguished by which treatment they have experienced, and (2) subjects must be randomly assigned to one of these groups.

The next type of methodology to be considered here fails to meet both criteria and hence is termed pre-experimental. While researchers using this design are prohibited from making statements about causality, pre-experimental designs can provide useful insights into SLA

which later may be tested using more rigorous procedures. One type of pre-experimental design is called the one-group pretest–posttest design. An example of this design in the SLA literature is Gardner, Smythe and Brunet's (1977) study of the effect of intensive French language study on attitudes, motivation and achievement. Sixty-two students of French were administered a battery of attitude and motivation tests as well as a test of oral French proficiency prior to, and upon completion of, a five-week, residential summer programme. Changes in students' attitudes, motivation and French achievement were observed. Although these changes could not be said to be caused by the course, as they could have been due to other factors, the variables which were observed to change could form the starting point for future testable hypotheses.

We will consider the advantages and disadvantages of all experimental methodologies at the conclusion of our discussion of true experiments.

2.2.6 Quasi-experiment

Our next category, quasi-experimental designs, is closer to the true experiment in that one of two criteria of experimental design is met. The result is that one of the two sources of invalidity can be eliminated. Quasi-experimental designs do not require random assignment of subjects to groups but do include one or more control groups. Having said this, it seems contradictory to illustrate this category with a time-series design, since designs of this sort usually involve just one group. Nevertheless, time-series designs are quasi-experiments since they improve upon the one-group pretest–posttest design that was classified as pre-experimental. The improvement in a time-series design is that *multiple* observations of a group are made prior to and following the treatment. Thus, subjects in one group serve both as a control group and as an experimental group. The observations prior to the treatment should show the subjects as a control group, i.e. one should see what the learning curve is without treatment. The learning curve based upon the post-treatment condition is also charted. The observations after the treatment should indicate an upswing in the curve if the treatment had a positive effect on the subjects' performance.

2.2.7 Experiment

The basic premise of an experiment is that all factors save one are held constant. The single factor is varied to see what effect it has on the

phenomenon under investigation. As stated earlier, experiments have two criteria: (1) there are at least two groups included in the study, a control group and an experimental group; and (2) the subjects are randomly assigned to one of those groups.

The purpose of having the two groups in the study is that if one group is treated in one manner, and another in a different manner and their post-treatment behaviour differs, we can conclude that the behaviour differs as a consequence of their different treatments. This can only be concluded, of course, if the two groups are comparable to start with. This is the reason for criterion 2. Random group assignment allows the researchers to assume that they have two truly comparable groups at the outset of the experiment. A further safeguard to assure group comparability (especially desirable when subject populations are small) is to compare their performances on a pretest. If the experimental and control groups are equivalent and only the treatment they receive differs, then any post-treatment test differences can be attributed to the treatment itself.

An example of an experiment in the SLA field is Henrichsen's (1984) factorial design studying the effect of sandhi variation on the comprehensibility of English input. Sandhi variation refers to phonological modifications such as contraction (e.g. *gonna-going to*) assimilation (e.g. *watčə-what are you*), etc., which reduce the perceptual saliency of morphemes. Henrichsen hypothesized that native English-speaker comprehension would be unaffected by the presence or absence of sandhi variation; non-native speakers' comprehension, on the other hand, would be adversely affected by the presence of sandhi variation. Native English-speakers and ESL learners with high English proficiency and low English proficiency were randomly assigned to one of two treatment conditions: the presence or absence of sandhi variation. Subjects were administered an instrument used to measure their comprehension in the two treatment conditions. The significant interaction found between levels of English proficiency and presence/absence of sandhi variation supported the hypothesis.

The basic idea of an experiment is a powerful one. If one group of subjects is treated in one fashion and another in a different fashion, and there are no other factors influencing the two groups differentially, a cause-effect relationship between treatment and consequence can be determined. Furthermore, a properly controlled experiment allows researchers to generalize findings beyond those obtained from the specific subjects in the study to the population from which the sample was drawn. These are tremendous advantages of the experimental methodology. The use of an experiment is not without cost, however.

In order to enjoy these two advantages, the phenomenon under investigation must be removed from its real-world context. This results in simplification and unnatural manipulation of variables in which the researcher has an interest. The question we are left to face is whether or not such simplification and manipulation change the nature of the phenomenon under study, thereby making generalizations resulting from the findings to the 'real world' invalid. As Hatch and Farhady (1982) state the paradox:

Our goal should be to approximate as closely as possible the standards of true experimental design. The more care we take the more confident we can be that we have valid results that we can share with others. However, if we reduce our experiments to highly artificial laboratory-type experiments, we must also worry about whether the results can be directly transferred and shared as valid for the classroom. (p. 23)

Another drawback in using an experimental methodology is that experiments are sometimes totally inappropriate for studying human behaviour. An interesting experimental study would be one in which the progress in acquiring a second language of subjects receiving restricted input was compared with that of a control group receiving normal input. However, assuming that the acquisition of the group receiving impoverished input was hindered, it would not be ethical to proceed with the study, unless, of course, volunteers giving their informed consent were used.

At other times, the experimental methodology is inappropriate because one of the conditions cannot be met. For example, SLA subjects are typically composed of pre-existing classes of SL students. The criterion of random selection is not truly met under these circumstances. In these cases, a quasi-experimental methodology may be called for. Quasi-experiments exist as compromises for those interested in studying human behaviour in naturally occurring settings in which complete experimental control is difficult, if not impossible. Although quasi-experimental designs 'are not as adequate as the true experimental designs (since the sources of bias are not amply controlled), they are substantially better than the pre-experimental designs, with regard to control of the threats to validity' (Tuckman 1978, p. 136). Pre-experimental designs, then, are probably best viewed as simply hypothesis-generating. As Underwood (1966) puts it: 'We have no infallible criteria to distinguish between a superstition (a false notion concerning cause and effect) and a "reasonable" hypothesis about

cause and effect relationships prior to the time we put each to experimental test' (p. 5).

As we have traversed the continuum between the qualitative and quantitative poles, it may have become apparent that there was no neat separation between one methodology and the next. Indeed, we should probably not think of each methodology as a discrete entity, but rather as a constellation of typical attributes. Moreover, there is no reason why the attributes could not be interchanged so that combination or hybrid methodologies result. We have already illustrated this point with our earlier discussion of the longitudinal and cross-sectional approaches. To give a few more examples, there are focused descriptive studies which use focused introspection to probe some feature of language acquisition. (See, for example, Cohen and Hosenfeld 1981.) Also, there is nothing to prevent a researcher from entertaining hypotheses at the outset of a non-participant observation, nor is there anything in this type of study prohibiting the use of instrumentation to explore the subjects' knowledge of the second language. Kellerman (1974), for example, has suggested supplementing natural data with 'lateralization', in which information is elicited from the learner about specific points of the language he or she is spontaneously producing. To cite one final example, as has been mentioned above, researchers sometimes use correlational designs to look for possible relationships between learner characteristics and learner achievement. They could also, however, use a correlational design to test an *a priori* hypothesis about a relationship, though the results would not demonstrate causality. Only a true experiment will allow claims to be made about causality, although a correlation between two variables provides evidence consistent with a hypothesized causal relationship.

Thus, to some extent, features commonly associated with one methodology can be borrowed by another. In addition, there already exist some established methodologies that attempt to address issues from multiple methodological perspectives. One feature of Mehan's (1978) constitutive ethnography, for example, is that there is an attempted convergence between what non-participant observers note and what participants experience. Asking the participants to comment on the observers' analysis after the observation is one way of doing this. In another procedure, aptly termed triangulation, three perspectives are taken into account. Through a combination of introspection and observation, the teachers', the students' and the researchers' perspective on what transpired during a lesson are all brought to bear on a common experience. (See, for example, Hawkins 1985.)