

DCU LIBRARY



991342712

F. A.O. Library Staff

A Copyright Declaration form
must be signed by the reader
before this thesis is issued.

*Completed forms to be filed
at the Issue Desk.*

PhD

**Learning Strategies and Oral Proficiency:
An Investigation of the Language Learning Strategies Associated With
the Achievement of Higher Levels of Oral Proficiency in German**

by Jennifer Bruen, MA

Supervisor: Professor Michael Townson

**School of Applied Language and Intercultural Studies
Dublin City University**

February 2000

Declaration

I hereby certify that this material which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

Signed: J. Bruen ID No.: 75021048
Jennifer Bruen

Date: 29:02:00

Acknowledgements

I would like to thank all of those who have supported me in preparing this dissertation. In particular, sincere thanks to my supervisor, Professor Michael Townson for his advice and guidance. Special thanks also to language lecturers, Angela Leahy, Wolfgang Malik, Cornelia Opitz, Gabriele Schön, Iris Schneider and Andrea Wilke and to the second year students of 1997 and 1998 for their help with the experimental part of this research. Finally, thanks to Gerry Conyningham for his help with the statistical analyses.

Table of Contents

Abstract		i
List of Figures		ii
List of Tables		iii
Introduction		v
Chapter 1	Speech Production and the Development of Oral Proficiency in a Foreign Language	1
	<i>Overview</i>	2
1.1	The Speaking Process	3
1.2	Foreign Language Acquisition: Oral Proficiency	10
	1.21 Introduction	10
	1.22 The Input Hypothesis	12
	1.23 The Output Hypothesis	23
	1.24 Cognitive Science	34
	1.25 Conclusion	45
Chapter 2	Language Learning Styles and Strategies: Some Key Concepts and Studies	50
	<i>Overview</i>	51
2.1	Language Learning Styles	52
2.2	Language Learning Strategies	60
	2.21 Defining Language Learning Strategies	60
	2.22 Classifying Language Learning Strategies	63
	2.23 Strategy Assessment Techniques	66
	2.24 Factors Influencing Choice of Language Learning Strategies	74
	2.25 Language Learning Strategies and Learning Outcomes	82
	2.251 The "Good Language Learner"	83
	2.252 Correlational Studies	88
	2.253 Evaluation and the Proficiency Question	96
2.3	Conclusion	103

Chapter 3	Experimental Design and Research Methodology	104
	<i>Overview</i>	105
3.1	Formulation of the Research Questions	106
3.2	Experimental Design: An Overview	110
3.3	Subjects	113
3.4	Measurement Instruments	116
	3.41 Group Oral Examination	116
	3.42 Strategy Inventory for Language Learning	120
	3.43 Background Questionnaire	121
	3.44 In-depth Interview	121
3.5	Procedure	123
3.6	Data Analysis	124
	3.61 Quantitative Analysis	124
	3.62 Qualitative Analysis	127
Chapter 4	Presentation of Results	128
	<i>Overview</i>	129
4.1	Introduction	130
4.2	Research Question One	139
4.3	Research Question Two	148
4.4	Research Question Three	167
4.5	Research Question Four	187
Chapter 5	Discussion and Evaluation	194
	<i>Overview</i>	195
5.1	Discussion	196
	5.11 Introduction	196
	5.12 Presentation, Contextualisation and Evaluation	197
	5.13 Conclusion	216
5.2	Comparison with Existing Studies and Directions for Future Research	219
	5.21 Introduction	219

5.22	Learning Strategies and Oral Proficiency	219
5.23	Background Characteristics, Learning Strategies and Proficiency Levels	223
5.24	Learning Strategies and the Acquisition Process	230
5.25	Directions for Future Research	232
5.26	Implications for Classroom Practice	235
Sources of Reference		248
Appendices:		265
Appendix A	Strategy Inventory for Language Learning (modified version)	i-vi
Appendix B	Background Questionnaire	i-ii
Appendix C	Interview Protocol	i-iii
Appendix D	SPSS Output Statistics	i-xcvii

Abstract

This study identifies the language learning strategies associated with the achievement of higher levels of oral proficiency in German for one hundred Irish third level students. It is one of the first studies of this kind to be conducted in Ireland and one of the very few, if any, conducted on third level learners of German. Furthermore, as well as identifying the strategies associated with higher levels of proficiency, the study also investigates how these strategies are used by learners displaying higher and lower levels of proficiency. It then explores the question of how the strategies associated with higher levels of proficiency contribute to the process of proficiency development, and how students perceive them as contributing to this process. Finally, the relationships between learner specific characteristics, strategic behaviour and proficiency levels are assessed.

The experimental design combines a quantitative survey with in-depth interviews. The results indicate that orally more proficient students use more strategies more frequently. In particular, they use more cognitive, metacognitive and social strategies. Furthermore, they have a repertoire of approximately ten key strategies which they employ in a structured, purposeful manner and apply to a range of language learning situations. They are convinced that these strategies contribute to the development of proficiency, a view which is borne out by the quantitative findings. Finally, higher levels of motivation and more positive perceptions of personal proficiency levels are strongly associated with higher levels of both strategic behaviour and oral proficiency.

These findings have significant theoretical and practical implications. Firstly, they demonstrate the importance of expanding the research framework in studies of this kind beyond the mere identification of the strategies associated with higher proficiency levels. Instead, as in this study, future research should incorporate questions relating to the process of strategy implementation by more and less successful learners and to relationships between the use of particular strategies and the process of foreign language acquisition. Secondly, the findings contribute to our understanding of the strategic behaviour of the orally more proficient student, and in particular the orally more proficient learner of German in an Irish third level context. This understanding relates primarily to the strategies these learners use, the way in which they use them and their attitudes towards their use. Such an understanding forms the basis of successful strategies based instruction in the language classroom.

List of Figures

Number:	Title:	
1.1:	Levelt's Speech Production Model	4
1.2:	The Relationship Between Input and Output in Foreign Language Acquisition	14
3.1:	Research Questions	109
4.1:	Factor Listings	134
5.1:	A Bi-Directional Relationship Between "When learning a new German word, I put the word in a sentence" and Oral Proficiency	200
5.2:	"Star Diagram" of the Relationships Between the Five Key Variables	209
5.3:	The "Successful" Strategies	243

List of Tables

Number:	Title:	
3.1:	Sample Breakdown	115
3.2:	Correlation Matrix for Measures of Oral Proficiency	119
3.3:	Participants in In-depth Interviews	123
4.1:	Summary Statistics/Individual Results in the Oral Examination	130
4.2:	Summary Statistics/Final Results in the Oral Examination	131
4.3:	Correlations Between the Results in the Oral, Aural and Written Examinations	131
4.4:	The Number of Language Learning Strategies Employed	132
4.5:	Quantity of Strategies Employed in Each S.I.L.L. Category	133
4.6:	Strategy Factors: A Comparison	138
4.7:	The Relationship Between the Number and Frequency of Strategies Employed and Oral Proficiency	139
4.8:	Correlations Between Strategy Use on the S.I.L.L. Categories and Oral Proficiency	140
4.9:	Correlations Between Frequency of Strategy Use on the Factors and Oral Proficiency	141
4.10:	Variables in the Multiple Regression Equation	142
4.11:	Language Learning Strategies Demonstrating a Significant, Positive Correlation with Oral Proficiency	144
4.12:	Analysis of Variance: Relax by Oral Grade	145
4.13:	Analysis of Variance: Goals by Oral Grade	146
4.14:	Analysis of Variance: Sentence by Oral Grade	146
4.15:	Ten Strategies Associated With Higher Levels of Oral Proficiency	147
4.16:	Style One by Frequency of Use of Compensatory Strategies	149
4.17:	Style Three by Factor One	150
4.18:	Total Number of Language Learning Strategies Employed by Degree	152
4.19:	Frequency of Use of Factor Six by Degree	153

4.20:	Enjoyment, Motivation and Perceived Proficiency Levels, and the Total Number of Learning Strategies Employed	154
4.21:	Level of Enjoyment and the Use of Cognitive Strategies	154
4.22:	Level of Motivation and the Use of Cognitive Strategies	155
4.23:	Own Perception of Proficiency Level and the Use of Cognitive Strategies	155
4.24:	Relationships Between Student Specific Variables and General Strategy Use	157
4.25:	Check by Level	158
4.26:	Associate by Style Four	159
4.27:	Use of the Strategy "Relax" by Degree	160
4.28:	Enjoyment, Motivation and Perceived Proficiency Level, and Use of the Strategy "Goals"	161
4.29:	Enjoyment, Motivation and Perceived Proficiency Level, and Use of the Strategy "Errors"	162
4.30:	Relationships Between the Learner-Specific Characteristics and the Ten "Successful Strategies"	
4.31:	Level of Oral Proficiency (Individual Result) by Degree	164
4.32:	Intercorrelations between Enjoyment, Motivation, Perceived Levels of Proficiency, and Oral Results	165
4.33:	The "Successful" Strategies and the Components of Oral Proficiency	187

Introduction

Facilitating the development of oral proficiency in a foreign language depends on an understanding of the development process. It also requires an understanding of the language learning strategies that support this process. The primary objective of this study is to identify the language learning strategies associated with higher levels of oral proficiency in German for one hundred Irish third level students and to compare the ways in which these strategies are employed by those displaying higher and lower levels of oral proficiency.

The study also explores the question of how the strategies, identified as being associated with higher levels of oral proficiency, contribute to the development of proficiency and how learners perceive them as contributing to this process. Finally, the relationships between individual learner differences, and levels of both strategic behaviour and oral proficiency are investigated.

Several key terms appear throughout this study. Their meaning, within the parameters of this research, is as follows: Firstly, the term "oral proficiency" is used to mean a learner's global ability to communicate fluently, accurately and appropriately in authentic or authentic-like situations, relevant to their course objectives (see also Section 2.253).¹ Secondly, "orally more proficient students", i.e. those achieving higher scores in the oral examination (Section 3.41), are also referred to as "more successful" and "more effective" learners.

Thirdly, a distinction is sometimes made in the literature between subconscious processes for internalising a second language ("acquisition") and conscious processes ("learning"). However, since it is not yet possible to determine where one set of processes ends and the other begins, the term acquisition is used to include both conscious and subconscious processes except where indicated otherwise (Section 1.22). The term "proficiency

¹ Language ability cannot be cleanly divided into abilities to read, write, listen and speak. Instead, many of the necessary sub-skills and much of the requisite knowledge overlaps and influences performance in all four areas. Thus, the emphasis on speaking in this study is not intended to imply that it is a discrete ability. It is used, rather, to provide a focus for this research on one increasingly important aspect of language learning.

development" is used in a similar manner. Finally, "foreign language acquisition" is generally used to refer to the learning of a "foreign" language not widely spoken in the learner's own community. A "second" language, in contrast, has social functions within the community in which it is learnt. Given the position of Irish students learning German, the focus of this dissertation is on the process of foreign language acquisition.

The study is presented as follows: Chapter One provides background information on what is currently known about the processes by which learners develop oral proficiency in a foreign language. It draws primarily on material from the related fields of psycholinguistics, foreign language acquisition and cognitive psychology. The chapter begins by considering conceptual representations of the speaking process. Particular emphasis is placed on Levelt's model of speech production. A selection of hypotheses and theories in the field of foreign language acquisition, relevant to the development of oral proficiency in a foreign language classroom environment, are then reviewed. These are Krashen's Input and Swain's output hypotheses, Anderson's A.C.T-R² model, McLaughlin's information processing approach and connectionism.

Chapter Two is concerned with learners' attempts to control the process of proficiency development. It begins by looking at attempts to define and measure language learning styles. It then presents a selection of experiments designed to measure the ability of learning styles to predict learning outcomes and their influence on a learner's choice of language learning strategies. Attempts to define, classify and measure language learning strategies as well to identify those factors which influence a learner's choice of strategies are then described. The chapter continues with an examination of studies designed to identify the learning strategies most likely to enhance learning outcomes, and, in particular, the level of oral proficiency achieved.

Chapter Three formulates four central research questions based on the objectives of this study (see above). The methodology chosen to address these questions is described. The methodological issues considered relate to the experimental design, sample selection, measurement instruments, procedure, and data analysis.

² A.C.T. stands for "Adaptive Control of Thought" with "R" representing the latest in a series of models.

Chapter Four then describes the results of the primary research. The introduction reviews underlying trends and patterns in the data. Detailed findings relating to each of the research questions are presented in turn.

The results are interpreted in Chapter Five and the significance of the findings considered in the light of those obtained by similar studies. Implications for future developments in the fields of foreign language acquisition and language learning strategy research are discussed. Finally, implications of the findings for the language classroom are considered.

Chapter One

Speech Production and the Development of Oral Proficiency in a Foreign Language

Overview

The purpose of this chapter is to create a backdrop against which the learning strategies employed by successful oral communicators in a foreign language can be investigated and the implications of the findings discussed.

To begin, the speaking process is examined with particular emphasis on Levelt's speech production model. A selection of hypotheses and theories from the field of foreign language acquisition, most relevant to the development of oral proficiency in a foreign language classroom environment, are then reviewed. These are Krashen's Input and Swain's output hypotheses, as well as those associated with theories of cognitive science. These include Anderson's A.C.T-R model, McLaughlin's information processing approach and connectionism.

1.1 The Speaking Process

Before investigating how we learn to speak a foreign language, it is useful to have an understanding of what actually happens when we "speak" our own or another language. Although much still remains unclear about the processes involved in speaking, research in a number of disparate fields is gradually furthering our understanding of what it means to speak.

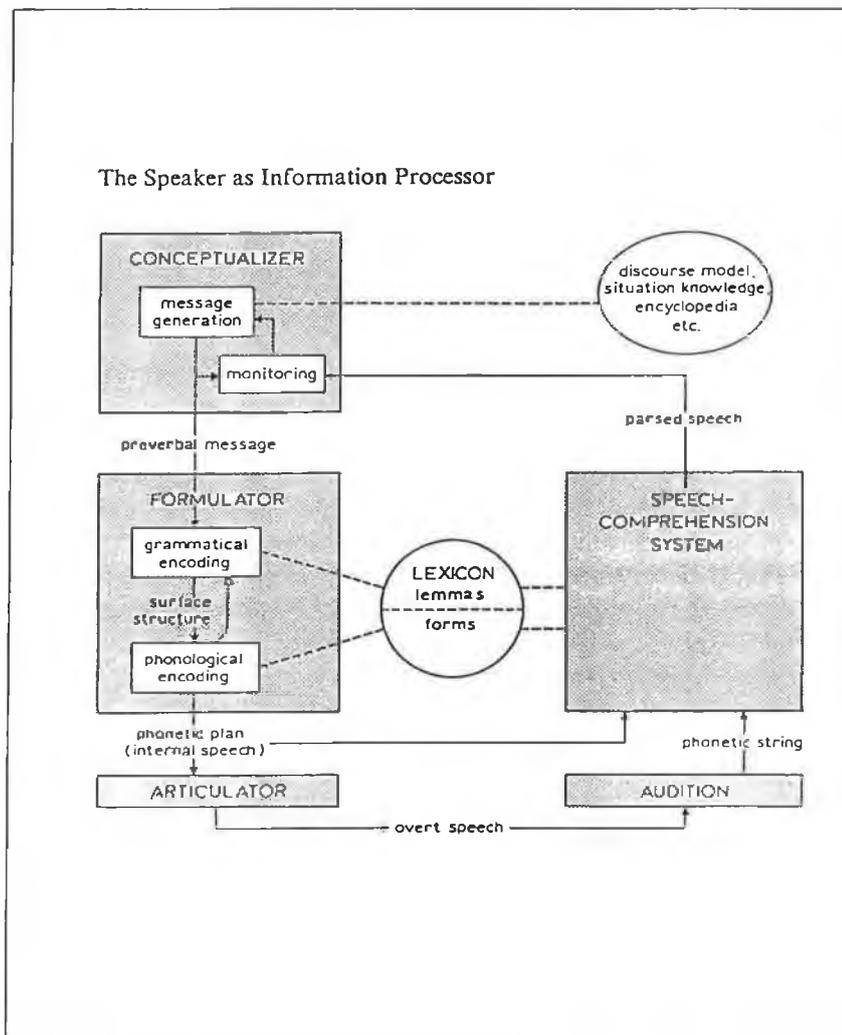
Of particular relevance in developing a comprehensive theory of speaking are the language production models such as those proposed by Anderson (1985), Chamot (1990) and, in particular, Levelt (1989). These models regard the speaker as a highly complex information processor who can transform intentions, thoughts and feelings into fluently articulated speech. The models, many of which are highly compatible, attempt to partition the processes involved in this transformation in a psychologically meaningful way.

Levelt's Speech Production Model (figure 1.1), for example, is based on empirical data gathered over several decades through experimental research and the observation of speech errors. It is an extension of earlier models proposed by Garrett (1975), Dell (1986) and Kempen and Hoenkamp (1987). In his book *"Speaking: From Intention to Articulation"* (1989), Levelt describes the speaking process as taking place in a series of autonomous stages.

The first stage is known as "conceptualising". This involves conceiving of an intention, selecting the relevant information to be expressed for the realisation of this purpose, ordering this information for expression and so on. The product of conceptualising is called the "preverbal message" (Levelt, 1989:8). Preverbal messages are propositional structures of a semantic nature. They need not be complete propositions; various other types of semantic structures, such as expressions denoting individuals, predicates and modifiers can be preverbal messages. The non-propositions are in a way elliptic messages, which can involve function/argument relations of various degrees of complexity. A preverbal message should also indicate mood, i.e. whether the utterance is

to be declarative, imperative or interrogative. They are, therefore, messages which contain all the necessary information to convert meaning into language, but are not themselves in a linguistic form.

Figure 1.1: Levelt's Speech Production Model



Source: Levelt, 1989:9

Levelt goes on to distinguish two stages in the planning of a preverbal message after a communicative intention has been conceived: macroplanning and microplanning. Macroplanning involves the elaboration of a communicative goal into a series of sub-goals, and the selection of the information to be expressed (asserted, questioned

etc.) in order to realise each of these communicative sub-goals. In other words, the speaker selects and moulds information in such a way that its expression will be an appropriate means for conveying the intention. This determines the "speech act", i.e. the commitments the speaker is prepared to make by expressing a particular informational content as well as the chosen levels of directness and politeness. Microplanning is concerned with the further shaping of each speech act and the ordering for expression of complex information involving several messages in order to bring them into the format required by a preverbal message. It involves assigning the right propositional shape to each chunk of information as well as the informational perspective (the particular topic and focus) that will guide the addressee's allocation of attention. Once completed, the preverbal message is a conceptual structure that forms the input to the next processing component, the Formulator.

The Formulator translates a conceptual structure into a linguistic structure. This translation proceeds in two stages. The first stage is known as "Grammatical Encoding". Here grammatical relations which reflect the conceptual relations in the message are generated. Evidence suggests (*Levelt, 1989:6*) that speakers construct the framework of an utterance without much regard for the phonology of words. Instead they use semantic and syntactic information from retrieved lexical items¹ to build a "surface structure". This consists of an ordered string of lemmas (the non-phonological parts of an item's lexical information) grouped in phrases and sub-phrases. This next stage of formulation is entitled "Phonological Encoding". Here, the goal is to produce a phonetic or articulatory plan for each lemma and for the utterance as a whole on the basis of the surface structure. The articulatory plan is not yet overt speech; it is an internal representation of how the planned utterance should be articulated ("internal speech") and can be scanned internally by the speaker via a speech comprehension system. This provides the first possibility for feedback.

The end product of the Formulator becomes the input to the next processing component, the Articulator. The Articulator unfolds and executes the phonetic plan as a series of neuro-muscular instructions. The product of articulation is overt speech. Overt speech,

¹ The way in which a speaker maps the package of information to be expressed onto spoken words involves the retrieval of lexical items from what Levelt calls the mental lexicon (*1989:6*).

like internal speech, is then guided to the speech-comprehension system which is connected to an auditory system, thus providing the second possibility for feedback and correction.

Some production models assume that the different components work in parallel. This concept of simultaneous processing poses two problems. Firstly, due to the different processing speeds of the components, several buffers are required to store intermediate products until they are needed. Secondly, language production requires a working memory which has a limited processing capacity. This working memory is subdivided into three components: a "Central Executive", which is a control centre responsible for selecting and carrying out various processes, and two "Slave Systems" which retain verbal and visual material (*Bourdin, 1994:593*). Since the working memory has a limited processing capacity, a limited number of cognitive operations can be under central or executive control at any one time.

This gives rise to the question of the extent to which the various processing components discussed above are subject to control by the speaker. When a component is not subject to central control, it is described as automatic and consumes few cognitive resources. In other words, it demands a low level of attention. Research findings, obtained using introspective techniques, indicate that conceptualising involves highly controlled processing requiring the speaker's constant attention, while there appears to be very little control over formulating or articulatory procedures.

However, the above models were designed primarily to describe the processes taking place during normal spontaneous production of one's native tongue. Chamot (*1990:60*) suggests, in contrast, that, at the early stages of foreign language learning, the processes of formulation and articulation are slower, more laborious and highly conscious. Given that formulation, in particular, requires the selection of the right words or lexical units as well as the application of the correct grammatical and phonological rules, this theory appears plausible. Poulisse and Bongaerts (*1994:53*) also speak in more general terms of the "reduced automaticity of speech production in the case of beginning learners".

De Bot (1992) in his attempt to adapt Levelt's model to bilingual speech production further suggests that the Conceptualiser is partly language-specific and partly language-independent (*see also Cook, 1992*). In other words, it appears more likely that macro-planning is not language specific while micro-planning is. During macro-planning, the language to be used is selected and language specific encoding takes place during micro-planning. De Bot also argues that research conducted on the storage and retrieval of lexical and syntactic information by bilinguals indicates that different formulators may exist for each language, while there is one lexicon where lexical elements from different languages are stored together in networks, which enable subsets of items to be activated. He further suggests that one such subset can be the items from a specific language. This proposal has since been supported by research on unintentional language switches by bilingual speakers conducted by Poulisse and Bongaerts (1994).

De Bot then argues that the output of the various Formulators is sent to the Articulator which makes use of an extensive set of non language-specific sounds and pitch patterns from both languages. This assumption is based on extensive evidence of cross-linguistic influences at the pronunciation and phonological level as well as codeswitching (*Cook, 1992:569*). These would appear to indicate that the first language continues to play a role even when the speaker has a high level of proficiency in the second language. Finally, de Bot suggests that if we accept that each language has its own Formulator, then it would seem natural to assume a separate speech-comprehension system for each language as well. Research in this area is, however, highly speculative and at a preliminary stage. In the words of de Bot himself (1992:7) it "invokes as many questions as it answers".

Alternative approaches to understanding the speaking process have also been proposed, for example by Martin Bygate (1988). Bygate's framework distinguishes between language knowledge and language skill. The former is described as a set of grammar and pronunciation rules, and vocabulary, and knowledge about how these are normally used. Skill is seen as the ability to use the above and can be divided into motor-perceptive and interactive skills.

Motor-perceptive skills involve perceiving, recalling and articulating, in the correct order, the sounds and structures of a language, whereas interaction skills involve using knowledge and basic motor-perception skills to achieve communication. According to Wilkins (1974:76), interaction skills are those of "controlling one's own language production" and "having to make one's own choices". They involve making decisions about what to say, how to say it, whether to develop it further and so on, while at the same time maintaining the desired relationship with others. Interaction skills are influenced by both processing conditions and reciprocity conditions.

Processing conditions include time pressure which affects the language used in a number of ways. Speakers may use devices in order to facilitate production as well as sometimes having to compensate for any difficulties which may arise. According to Bygate (1988:14), the fact that speakers have less time to plan, organise and execute their message means that they are often exploring their phrasing and meaning as they speak. This results in four common features of spoken language: simple syntax, ellipsis (or incomplete sentences), fixed conventional phrases (or formulaic expressions) and devices designed to gain time. These include "fillers", pauses and hesitation devices, such as repetition while trying to find a needed word.

Reciprocity conditions are concerned with the dimension of interpersonal interaction and include both negotiation of meaning and management of interaction. Negotiation of meaning involves the skill of communicating ideas clearly. It concerns not only how much information is communicated but also how specific or explicit the information is. The level of explicitness is influenced by the employment of various strategies of communication including paraphrase, metaphor and the use of particular vocabulary or terms to vary the degree of precision. Management of interaction on the other hand refers to the process of agreeing who is going to speak next and what he or she is going to talk about. It is this kind of freedom to intervene in a conversation that distinguishes it from a speech or lecture. Interaction management has according to Bygate (1988:36), two important aspects: agenda management and turn-taking. Agenda management refers to control over the content or the choice of the topic of a conversation. Turn-taking on the other hand refers to who speaks when and for how long.

Although different in many ways, both of the above models contribute to an understanding of the speaking process². Levelt's model approaches the speaking process from a psycholinguistic point of view. Its primary objective is to understand the mental processes underlying the speaking process. Bygate approaches the same phenomenon from the point of view of the language pedagogist and views speaking primarily as the interaction of knowledge and skills resulting in the production of spoken language.

Both of the above models of speech production are, however, "steady state" models. In other words, while providing a theoretical framework within which the speaking process can be examined, they do not purport to describe or explain the process by which proficiency is developed. In the next section we look at various theories from the field of foreign language acquisition which attempt to explain this process.

² Bygate's views can also be analysed from the perspective of defining and operationalising the concept of oral proficiency (see also Section 2.263).

1.2 Foreign Language Acquisition: Oral Proficiency

1.21 Introduction

There has been no shortage of theorising about foreign language acquisition since the inception of the field approximately thirty years ago in the late 1960s. Research in this field is complex and diverse. It draws on a range of areas including psychology, linguistics, discourse analysis and sociology.

Indeed, according to Larsen-Freeman and Long (1991:227), at least forty "theories" of foreign language acquisition have been proposed. There is often a degree of overlap between the theories but equally often areas of uniqueness can be found. Some researchers find the multiplicity of theories problematic and feel it to be indicative of the immaturity of the field (see for example Ellis, R., 1995:73). These many theories have not yet succeeded in providing a composite picture of foreign language acquisition. Instead they view the process from different viewpoints and, as a result, offer complementary perspectives with each theory having advantages which the others lack while simultaneously embodying disadvantages.

Two primary approaches have been taken in the development of these frameworks. The first, the theory-then-research (or "causal-process" (Larsen-Freeman and Long, 1991:226)) approach, argues that theorising should precede and therefore inform empirical study, guiding the specific hypotheses it seeks to examine. This approach consists of five stages. To begin, a researcher comes up with a theory based on hunches and relevant research. The theory is then formulated in terms of a series of hypotheses. Each hypothesis must be capable of both explaining what is already known about the phenomenon under investigation and predicting what may be observed in the future. The prediction is a test of the hypothesis in question. Research then begins to test the prediction and on the basis of research conducted, the hypothesis can be confirmed, modified or rejected. The process does not stop at this point but continues, in that if the first prediction is confirmed a new prediction is then tested, thus further developing the original theory.

The research-then-theory (or "set-of-laws") approach, on the other hand, is of the school of thought that theorising should only follow extensive and rigorous empirical research. This approach has four stages, the starting point being a "research question". This question represents an area of interest which the researcher would like to investigate. The second stage involves the measurement of characteristics related to the phenomenon. The researcher then looks for specific patterns in the data collected and attempts to formalise patterns as rules, explanations, or insights into specific aspects of foreign language acquisition (*Ellis, R., 1986: 248-250*).

Both of these approaches have their strengths and weaknesses. The theory-then-research approach provides a basis for testing aspects of an overall theory. Researchers are however sometimes reluctant to abandon a theory in which they have invested a lot of time and effort even in the face of somewhat contradictory evidence. The research-then-theory approach can provide valuable insights into aspects of the process or phenomenon under investigation. It is, however, not always clear how different findings relate to each other. Finally, it is unlikely that researchers adhere strictly to one approach or the other in the theory construction process. Instead, a reciprocal, cyclical relationship between theory and data is thought to be more likely (*see for example Larsen-Freeman and Long, 1991:226*).

Theories developed using the above approaches include the acculturation and nativisation models, accommodation theory, discourse theory, neurofunctional theory (*for discussion on each of these theories see Ellis, R., 1986, chapter ten*), universal grammar theory, functional-typological theory (*Larsen-Freeman and Long, 1991, chapter seven*), the competition model and the socio-educational model (*Cook, 1996, chapter eight*) among others.

The purpose of this section is not to review all existing theories of second and foreign language acquisition. Instead it focuses on three key theories/areas that appear most relevant and useful in explaining the development of oral proficiency in a classroom setting. The theories chosen for review are the Input and output hypotheses and those related to the theory of cognitive science, including in particular Anderson's A.C.T-R

model, McLaughlin's information processing approach and connectionism. Each of these is now examined in turn.

1.22 The Input Hypothesis

The Input hypothesis is one of the most ambitious and controversial theories in the field of foreign language acquisition. It was first proposed by Stephen Krashen in the late 1970s and evolved in a series of articles (*Krashen 1977a, 1977b, 1978a, 1978b, 1989*) and books (*Krashen, 1982, 1994; Krashen, 1981, 1985, and Krashen and Terrell, 1983*). Krashen argues that his account of foreign language acquisition provides a general, overall theory with important implications for language pedagogy. He further argues that the Input hypothesis is supported by empirical evidence from a large number of studies in a wide variety of language learning contexts.

The Input hypothesis³ consists of five interrelated hypotheses. These are known respectively as:

1. the input hypothesis
2. the acquisition-learning hypothesis
3. the monitor hypothesis
4. the natural order hypothesis
5. the affective filter hypothesis

Each of these five hypotheses is now described in turn. The research on which Krashen based these hypotheses is then considered together with counter-arguments put forward by a number of researchers. Although all five hypotheses are considered, emphasis is placed on the input hypothesis itself as it is most relevant to this research.

³ "Input hypothesis" written with a capital "I" is used to denote all five of the component hypotheses including the "input hypothesis".

The input Hypothesis

This hypothesis (from which the overall hypothesis, originally known as the "Monitor hypothesis", takes its name) states that "humans acquire language in only one way, - by understanding messages or by receiving "comprehensible input"" (*Krashen, 1985:2*). Therefore, language acquisition depends on trying to comprehend what other people are saying. Once the learner receives meaningful input in the foreign language and endeavours to understand it, acquisition will occur.

More specifically, the input hypothesis claims that a necessary (but not sufficient) condition to move from stage i to stage $i+1$, where i represents the learner's current level of competence in the foreign language and $i+1$ represents the next level, is that the learner understand input that contains $i+1$, where "understand" means that the learner focuses on the meaning and not the form of the message (*Krashen, 1982:9*). Language is acquired, in other words, only when the learner understands language that contains structures that are "a little beyond" their present level of competence. The learner does this by using not only their current level of linguistic competence but also their knowledge of the world and any extra-linguistic information available. Thus, according to the input hypothesis, language is acquired by "going for meaning" and, as a result, acquiring structure.

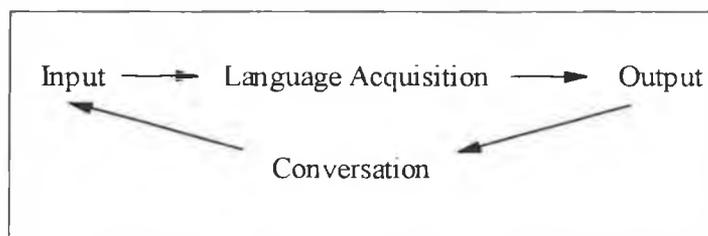
The input hypothesis also states that acquisition fails to occur when the learner is deprived of meaningful language. For example, classroom activities that focus on the forms of language rather than on meaning will, according to this hypothesis, not facilitate language acquisition.

The hypothesis further claims that production (speaking and writing) is unnecessary in the acquisition process. A person can, within the terms of this model, learn a language without ever having to use it productively. Productive skills, when they emerge, are simply the external expression of the system which the learner has internalised at a particular stage of development. According to Krashen, "Speaking is a result of acquisition and not its cause" (*Krashen, 1985:2*). He further states "...we acquire spoken

fluency not by practising talking but by understanding input, by listening and reading. It is, in fact, theoretically possible to acquire language without ever talking" (Krashen, 1982:60).

According to this model, verbal output has a role to play in language acquisition only in the sense that the more the learner talks the more people will respond to the learner in the foreign language. Thus, speaking on the part of the learner will affect the quantity of input to which they are exposed. It will also affect the quality or usefulness of input directed at the learner. Conversational partners, for example native speakers, teachers or other students, generally try to assist the learner in understanding by modifying their speech. They can judge how much to modify by how much appears to be understood and by listening to the learner talk. According to Krashen (1982), a foreign language speaker who makes a lot of mistakes, is hesitant and has a poor accent will receive in general more modified input than a speaker who appears competent and fluent. Engaging in conversation is therefore likely to be more effective than "eavesdropping" for language acquisition. In conversation the learner has some degree of control of the topic, can signal to the partner that there is a comprehension problem and so on. In other words, he can manage and regulate the input and make it more comprehensible. There is no such control in eavesdropping. However, in order to participate in conversation there must be output from each partner. Hence, the indirect contribution of speech to language acquisition. This has been displayed diagrammatically as follows:

Figure 1.2: The Relationship between Input and Output in Foreign Language Acquisition



Source: Krashen, 1982:61

It is this emphasis on the importance of processing input and the unimportance of producing output that distinguishes Krashen's theory from most others and has also made it particularly controversial. Krashen does, however, qualify and elaborate his theory:

The Acquisition-Learning Hypothesis

For example, Krashen believes that adult learners of a foreign language have at their disposal two independent means of developing competence in a foreign language: acquisition and learning. He defines acquisition as "a subconscious process that results in linguistic knowledge that is subconsciously stored in the brain". This process of foreign language acquisition uses the language faculty in the same unconscious way as first language acquisition and results in the ability to actually use the foreign language. Learning on the other hand is defined as "a conscious process that results in "knowing about" language" (*Krashen, 1994:45*). Krashen does accept that other processes apart from the understanding of comprehensible input, such as for example producing output, can result in learning. He denies, however, that the form such knowledge takes is capable of being the basis for normal use of language. In other words, he claims that "learnt" knowledge can never be used to express something that you actually want to say. In his opinion, it leads to nothing more than the ability to "Monitor"⁴ what the learner wants to say or write when the circumstances allow. Krashen is also of the opinion that learnt knowledge can never be converted into acquired knowledge. This has been described as a "no interface", "non-conversion" or "dual competence" position with respect to the relationship between acquisition and learning.

The Monitor Hypothesis

Learnt knowledge is seen as playing a role in the Monitoring of output. Once potential material has been prepared in the foreign language, the learner can refer to conscious rules and make certain corrections before the utterance is spoken or written. Thus, Monitoring provides a conscious check on what the speaker is saying. Monitoring can

⁴ Monitoring with a capital "M" is distinct from monitoring with a small "m" found in first language use, in that it employs consciously known rules rather than "feel" for language (*Cook, 1993:53*).

take place before or after articulation has taken place. The extent to which Monitoring is employed by the learner depends on both the task type and the learner's personality. The Monitor hypothesis further claims that learnt knowledge is only available for Monitoring and cannot be used in other ways. According to Krashen, three conditions must be met if the Monitor is to function successfully. Firstly, the learner must have sufficient time, they must be aware of the relevant rule and finally they must be "focused on form or concerned with correctness" (*Krashen, 1994:46*).

The Natural Order Hypothesis

As we saw with regard to the input hypothesis, in order for the learner to progress, the level of input to which they are exposed must be slightly beyond their current level. In other words, learners progress continuously from stage i to stage $i+1$. This scale invokes Krashen's Natural Order hypothesis. This hypothesis states that the rules of language are acquired by the learner in a predictable order. Some rules tend to come earlier while others follow. Krashen (*1985:1*) goes on to state that: "...the order does not seem to be determined solely by formal simplicity and there is evidence that it is independent of the order in which rules are taught in language classes". Indeed, Krashen goes as far as to claim that those whose exposure to a foreign language is almost entirely outside of the classroom setting do not show a different order of acquisition from those who learn predominantly in a formal classroom setting. Therefore, he feels that a "natural order" of acquisition must be operating independently of conscious grammar. He does qualify this claim to some extent in his statement that, "The agreement among individual acquirers is not always 100%, but there are clear, statistically significant similarities" (*Krashen, 1982:12*).

The Affective Filter Hypothesis

Finally, Krashen is concerned with the fact that acquisition is not equally successful for all language learners even when they receive apparently identical comprehensible input. Krashen (*1982:66*) explains this by stating that "comprehension is a necessary condition for language acquisition but it is not sufficient". In order for acquisition to take place the

learner has to absorb the appropriate parts of the input. Krashen claims that while affective variables do not have a direct effect on language acquisition they can prevent input from reaching the language acquisition device⁵. If, for example, the acquirer is anxious, has low self-esteem or does not consider him/herself a potential member of the group that speaks the target language s/he may understand the input but it may not reach the language acquisition device. In other words it may be blocked by an "Affective Filter".

Krashen (1985) cites a number of research findings which he feels support his five hypotheses. For example, with regard to the input hypothesis, Krashen points to the fact that people often speak to children acquiring their first language in a particular way. This form of speech, which he calls "motherese" or "caretaker talk", is distinguished by syntactic simplicity and an emphasis on the here and now rather than on the abstract and remote. This gives it the qualities of comprehensible input and leads, he believes, to acquisition in children. Similarly, language learners often encounter language tailored to their level or a level just beyond it, as they are exposed to "teacher talk". According to Krashen, this form of speech is slower and well formed, has shorter sentences, simpler syntax and shows signs of adaptation to the learner's level. These characteristics greatly improve the comprehensibility of the input.

Furthermore, learners often go through an initial silent period. For example, children learning a second language may not communicate at all in the foreign language to begin with. According to Krashen (1982:27), during this time "the child is building up competence in the second language via listening, by understanding the language around them".

Krashen also analyses a number of studies and concludes that older learners are better at short term foreign language learning while younger learners are better at long term foreign language learning. He explained this in terms of the input hypothesis by claiming

⁵ According to Krashen, the "language acquisition device" (L.A.D.), an "innate mental structure", is made up of the natural language learning abilities of the human mind, completely available in first language acquisition and available in foreign language acquisition according to the level of the affective filter (Cook, 1993:54; Firth and Wagner, 1997:287). He further states that the process of "learning" unlike the process of "acquisition" uses faculties of the mind which exist outside the L.A.D

that older learners are exposed to more comprehensible input. This is partially due to the fact that more input is comprehensible to older learners because their knowledge of the world makes the input more meaningful than it would be for a child. Younger learners on the other hand have lower affective filters.

Krashen further argues that some research results show that a larger amount of exposure to the target language leads to a higher level of proficiency. For example, in a number of studies variables such as length of residence in the foreign country (*Carroll, 1967, Murakmi, 1980; see also Krashen, 1989:441*) correlate with levels of proficiency. Furthermore, children of deaf and blind parents are sometimes slower in acquiring language because of the lack of comprehensible input (*Long, 1983*).

Krashen also believes that teaching methods which rely almost completely on comprehensible input, such as, for example, the "Total Physical Response" method and "The Natural Approach" are superior to traditional audiolingual methods. He goes as far as to claim that "an approach that provides substantial quantities of comprehensible input does better than any of the older approaches" (*Krashen, 1982:30*). Similarly, Krashen claims that immersion and bilingual programmes are successful because they provide the learner with large quantities of comprehensible input. In such programmes the emphasis is on the content of the courses being taught rather than on the language which is the medium of instruction.

If we consider the evidence presented by Krashen in support of the input hypothesis in more depth, it becomes clear that some of his claims are somewhat questionable and represent a large leap from a small amount of evidence, sometimes taken from research into first language acquisition, to an all encompassing "umbrella" theory relating to the process of second/foreign language acquisition (*see discussions in, for example, Cook, 1993: 58-68; McLaughlin, 1987*).

For example, the claim that failure by parents to address tailored and thus comprehensible speech to their children delays first language acquisition has not been empirically tested in the areas of either second or foreign language acquisition and

remains somewhat intuitive although plausible. Furthermore, the fact that learners are exposed to a special variety of language does not necessarily prove that this actually helps them to learn the language. In other words, there is no necessary cause and effect relationship between tailored speech and effective learning. Indeed, it has been argued that simplified input may in fact deprive the learner of material necessary for effective acquisition.

The use of the "silent period" by Krashen in support of his hypotheses is also questionable. The fact that learners may delay speaking may have as much to do with embarrassment, anxiety, lack of confidence and/or personality traits when beginning a new language as with the need to store comprehensible input.

The arguments in regard to older and younger learners appear plausible to begin with, although the argument that younger learners are exposed to less comprehensible input than older learners and therefore do not perform as well in the short term appears to contradict the claim (which is at least implied) that younger learners are exposed to more "caretaker" speech. If it is the case that they are exposed to more comprehensible input then, according to Krashen's theory, they should do better in both the short and the long term rather than worse in the short term and better in the long term. This is however not borne out by the empirical findings quoted by Krashen. Furthermore, many other explanations for the superiority of older learners are possible (*McLaughlin, 1984*). These include their need to speak about more complex and demanding topics and their ability to profit from correction and training in grammar.

The fact that a number of studies indicate that length of residence in the country in which the target language is spoken correlates with level of oral proficiency in the language also does not prove that exposure to comprehensible input alone resulted in acquisition. It could also be argued, for example, that the longer the length of residence the greater the numbers of opportunities to produce the target language. Similarly, the children of deaf and blind parents do not generally have as many opportunities to produce the target language as well as being exposed to less comprehensible input. The fact that they tend

to be slower in acquiring language cannot therefore be used in support of the input hypothesis.

Krashen's claim that comprehension based teaching methods tend to be superior is also a sweeping one which is not borne out by research. The vast majority of teaching approaches involve exposing the learner to some form of comprehensible input. The teaching situation is also a highly complex one with a large number of factors influencing the rate at which students acquire proficiency in a foreign language (*see also Cook, 1993:62*). Finally, a number of researchers disagree with Krashen's views on the value of immersion/bilingual teaching programmes. According to Cook (*1993:63*), "in some cases immersion sometimes leads to a fossilised classroom pidgin". Swain (*1985*) for example found that after seven years of immersion teaching, students of French continued to make a large number of errors despite the wealth of comprehensible input to which they had been exposed. Furthermore, as with the claim relating to the superiority of comprehension based teaching methods, evidence from immersion teaching and bilingual programmes is not clear cut since the rate of proficiency development is influenced by many other learner based and situational factors apart from exposure to comprehensible input.

Krashen's input hypothesis is an example of a theory-then-research model. In other words, he came up with a theory on the basis of intuition and experience and began to look for research evidence to support it. Unfortunately, many of Krashen's claims do not lend themselves to empirical testing. This is partially due to the difficulty of measuring a concept like "comprehensible input". It is also due to the fact that "exposure to comprehensible input" is a difficult variable to isolate in language learning contexts. The evidence which is cited above supports the claim that comprehensible input leads to language acquisition, a fact which is unlikely to be disputed. The evidence does not, however, definitively prove that it is the sole element required for language acquisition. The research quoted by Krashen also fails to prove that output has no other role to play in the process of foreign language acquisition than to influence the quantity and quality of input to which the learner is exposed.

Conclusive research evidence in support of the remaining four elements of the Input hypothesis is also difficult to find. For example, according to Cook (1993:63), the distinction made between acquisition and learning is "more an assumption than a discovery". Krashen bases his claim that conscious learning does not become unconscious acquisition on three points. Firstly, acquisition can occur independently of learning. For example, some learners can be competent in a foreign language but not know many rules consciously. Secondly, cases exist where learning never becomes acquisition, for example, someone may know a rule but continue breaking it. Finally, no learner can possibly know all of the rules (Krashen, 1982:83).

While all of these arguments may be true they do not prove that learning never becomes acquisition. Indeed, this claim runs counter to the intuitive belief of many language learners who feel that rules can be acquired through learning. It also contradicts the process of "proceduralisation" of knowledge in the theory of cognitive science which we will be examining in more detail later in this chapter. The Monitor hypothesis is based on this assumption that a division exists between acquisition and learning, or at least between the roles that "acquired" and "learnt" material can play in the language production process. Krashen (1982) discusses case histories which he believes show Monitoring in operation. For example, a Chinese learner of English made errors in speech which she was able to correct according to conscious rules but made far fewer errors in written production. While this does indicate that some consciously learnt rules cannot be applied in real-life speaking situations, it is far from proving that all consciously learnt rules are only available via the Monitoring process or that learnt knowledge is not capable of being converted into acquired knowledge. In other words, insufficient evidence exists for both the Monitor Hypothesis and the claim for no-interface between acquired and learnt knowledge.

Krashen cites the order in which grammatical morphemes and negation have been shown to be acquired (see for example Dulay and Burt, 1974) as evidence for the natural order hypothesis. A number of researchers (including McLaughlin (1987:32)) question the validity of these sequences. Even if they were to become widely accepted, they represent a tiny proportion of what a full developmental scale would require. Further questions as

to whether the natural order is interfered with by Monitoring, whether it shows a distinction between acquisition and learning and whether or not it requires a particular form of comprehensible input remain unanswered.

Finally, Krashen bases his Affective Filter theory on research carried out by a number of different researchers (for reasons other than to determine the existence or otherwise of an affective filter). For example, in 1959, Gardner and Lambert concluded that integrative motivation, or the desire to take part in the target culture, influences proficiency, while in 1972 (*Cook, 1993:65*), they concluded that aptitude and attitude influence learning. Krashen reinterpreted these and other research findings as evidence for the existence of an affective filter. In the opinion of Cook (*1993:65*) however, "it is possible to accept all these factors as having some effect on L2 learning without accepting the existence of a filter...". Once again Krashen's "evidence" while apparently plausible fails to rule out alternative explanations.

In conclusion, Krashen's Input hypothesis has been described as both "stimulating" and "frustrating" (*Cook, 1993:65*). On the one hand, it provides a simple set of propositions which seem to make intuitive sense about foreign language learning. On the other, however, the five intertwined hypotheses are linked through a chain of assumptions and inferences and no single hypothesis is based on any conclusive empirical evidence.

Of particular relevance to this research is "input hypothesis" itself and its claim that acquisition is caused solely by understanding input. As we have seen, this hypothesis claims that output has no role to play in the process of foreign language acquisition, other than to influence the quantity and quality of input to which the learner is exposed. It was partly in response to this claim that researchers developed output hypotheses. These are evaluated in the following section together with the research findings on which they are based.

1.23 The Output Hypothesis

The most influential and comprehensive of the output hypotheses was that proposed by Merrill Swain in 1985 (*discussed in, for example, de Bot, 1996; Swain, 1993, 1995; Swain and Lapkin, 1995;1998*). Swain is involved in a number of immersion programmes in Canada for children with French as a second language. In these immersion programmes the pupils receive all or part of their education through the second language. The teaching of the second language is, therefore, integrated with content teaching. As a result, students are exposed to a rich source of comprehensible input. However, research has revealed a lack of sustained talk in the foreign language by the students involved in these programmes. Analysis of their proficiency level revealed that they score particularly well on global tests of listening and reading by the end of secondary school (*Swain and Lapkin, 1995:372*). Many continue, however, to have problems speaking and writing the target language. Although these students' language improves as they progress through the grades, Swain and Lapkin (*1995:373*) comment that "their interlanguage remains sufficiently "off-target" as to be a cause of concern". Once they have reached a stage where they can make themselves understood their rate of learning/acquisition⁶ appears to slow down and many have problems with accuracy.

On the basis of these findings, Swain concludes that, although input is invaluable in foreign language acquisition, it does not appear to be sufficient for the mastery of a language. In her opinion, language learning occurs whenever learners produce the foreign language either in its written or spoken form and, in particular, when learners are pushed to make their output comprehensible. She suggests that producing output causes learners to process language more deeply, i.e. with more mental effort than does being exposed to input. When producing output the learner is more active and has greater control over the process. Furthermore, even a prospective need to produce output may cause learners to process input more deeply (*see for example Swain and Lapkin, 1995:386*).

⁶ Swain, unlike Krashen, does not differentiate between acquired and learnt material and believes that an interface does exist between consciously learnt and sub-consciously acquired material. A similar stance is taken in this dissertation (see Introduction).

More specifically, Swain hypothesises that the production of output fulfils a number of specific functions in the process of second/foreign language acquisition which are not fulfilled by exposure to input. Each is now discussed in turn.

One relatively non-controversial function of producing output, in the sense of practising, is that it gives the learner the opportunity to increase their fluency. Swain pays relatively little attention to this function but merely assumes this to be the case. De Bot (1996:553) attempts to explain it in cognitive processing terms (an area we shall return to later in this chapter). He suggests that increasing fluency through output is much more than increasing speed of delivery. Instead it involves increased automaticity of speech with the learner expending fewer attentional resources on the speaking process and more, for example, on the content of the message to be communicated in the foreign language (see also Section 1.1).

The other three functions proposed by Swain relate more to accuracy than to fluency. The first of these three claims is that output promotes "noticing" (for example Swain and Lapkin, 1995). This function has also been described as the "consciousness-raising" function. In other words, when learners speak in the target language, they may notice a discrepancy between what they would like to say and what they are able to say. Noticing may occur before articulation has taken place, i.e. when the message is still in the form of internal speech (Section 1.1). It may also occur after articulation. According to Swain and Lapkin, such noticing may be the result of either internal or external feedback. It is possible that this feedback may then trigger cognitive processes which might either consolidate learner's existing knowledge or generate linguistic knowledge, new to the learner.

Swain felt that in order to test this hypothesis it would be necessary to begin by demonstrating that learners sometimes notice a problem by means of implicit, or explicit feedback from, for example, a teacher, indicating that there are problems with the learner's output. She supports this theory using evidence from the area of communication strategies (Tarone, 1979, Faerch and Kasper, 1983, Bialystok, 1990, Kellerman, 1991) which suggests that learners do notice problems as they speak, and attempt to solve

them. For example, Bialystok (1990:3) in her book *"Communication Strategies: A Psychological Analysis of Second Language Use"*, describes young children learning their first language who, for example, wish to make reference to objects or events for which they lack the correct term. On realising the gap in their lexical knowledge, they often alter their goal and settle for a reference to an object or event which is similar but not identical to their intended meaning and is also lexically available in their knowledge of the language. In her opinion, this communication strategy is also employed by students learning a second or foreign language.

Other research, including that conducted by Pica, Holliday, Lewis and Morgenthaler (1989, in Swain and Lapkin, 1995:373), attempts to describe what learners actually do once they notice a gap in their knowledge. They asked pairs of native and non-native speakers to interact in different tasks. The aim of their study is to describe how non-native speakers react when native speakers indicate that they have difficulty understanding. Their findings suggest that learners modify their output in response to, for example, clarification requests or confirmation checks. Indeed, they discovered that one third of learners' responses in their research were modified either semantically or morphosyntactically.

Although it remains to be proven that these modified responses are held in the learners' interlanguage, Swain assumes this to be so. Indeed, recent findings have indicated it to be the case with regard to the fourth function of output, with which we will deal shortly where modified output, resulting from explicit reflection on the target language, has been shown to be maintained in the learners' interlanguage.

Swain also uses a study by Nobuyoshi and Ellis (1993) in support of her argument that output promotes noticing. In this study, three experimental participants are compared with three control participants. While completing a task based on the negotiation of meaning, the experimental group received a clarification request every time they made a past-tense error. The control group was asked for clarification only when there was a problem with meaning. One week later the groups repeated the task and it was discovered that two of the experimental participants had improved in terms of their

accuracy in the use of the past tense. These results would appear to indicate that "pushed output", focusing on a single linguistic aspect, can lead to sustained improvement over time. Given the size of the groups involved, however, these results have to be treated with caution.

This claim that pushing learners beyond their current performance level can lead to enhanced performance, due to either the internalisation of new linguistic knowledge or the consolidation of existing knowledge, is supported by a number of other researchers in the area of communication strategy research including for example Tarone (1983) and Liu (1991). Tarone states that, "...a learner's use of communication strategies can function to stretch an interlanguage system beyond its current limits". She bases her argument on data presented by Liu. Liu studied the language of development of Bob, a young Chinese child, and determined that he attempted to use much more complex language structures when speaking to her than to his peers. Once he had used these structures with her though, they gradually began to appear in the language of interaction with his peers. This suggests that Bob may have noticed gaps or deficiencies in his output and striven to remove them. He may for example have focused more intensely on input, used a dictionary or asked for assistance.

Questions then arise as to what kind of gaps, problems or deficiencies learners notice when they are pushed and how they attempt to deal with them. A number of researchers including Van Dijk and Kintsch (1983) have shown that comprehension relies on very different strategies to production. For example, in comprehension, learners often rely on content words alone and guess using semantic clues and, in the opinion of Krashen (1982:66), extra-linguistic information. Speaking, on the other hand, requires more complex linguistic tasks. For example, accurate speech requires a system of grammatical rules. On the basis of this argument, Swain (1985, 1993) hypothesises that a function of output in foreign language acquisition could be to force the learner from the semantic processing required for comprehension to the syntactic or grammatical processing necessary for speech and writing.

Swain and Lapkin conducted a study designed to test these theories in 1994. Thirteen year old French immersion students were asked to think-aloud while writing an article on environmental problems. The students did not have access to a dictionary or any other aid. Swain and Lapkin abstracted sections from the think-aloud protocols where students either spoke about and/or solved (either correctly or incorrectly) a language problem they encountered while writing. Swain and Lapkin further attempted to categorise these sections according to the mental processes reflected in the changes the students made to their output. The results indicate that second language learners do notice gaps in their linguistic knowledge as they produce output and that, in this case, forty percent of the problems encountered were related to grammatical form. Furthermore, the results indicate that learners engage in cognitive thought processes such as generating and assessing alternatives when they encounter a problem in foreign language production. Thus, Swain believes that what occurs between the first output and the second is part of the process of language acquisition. She (1995:131) even goes as far as to suggest that "...the modified, or reprocessed, output can be considered to be the leading edge of a learner's interlanguage" .

A second, though not unrelated, means by which speaking may, according to Swain, aid the language learning process is through hypothesis generation and testing. That is, when students speak in the foreign language it allows them to generate and test hypotheses as to how the target language works. Much research carried out since 1975 has indicated that output can be an indication that a learner has formulated a hypothesis and is testing it (*see for example Selinker, 1972; Corder, 1981*).

In some cases, the output is produced during interaction with another learner. For example, in a study conducted by Swain and Lapkin (1998), a discussion between two immersion students of French, as they completed a story reconstruction task and wrote a short narrative based on the story, contains evidence of the generation and testing of hypotheses. In this study, the emphasis is placed on reflexive verbs and adjectival agreement. Indeed, this study goes a step further in that pre- and post-tests are incorporated into the experimental design. The items contained in the pre-test were generated using another class at a similar level and consists of the items which were

discussed by this class. The post-test contains the elements included in the pre-test and any other items that were debated by the student dyad concerned. Comparing the results of the pre and post-tests indicate that not merely do the students formulate and test hypotheses, they also "learn" the material discussed, i.e. they present the agreed version in the post-test even though in some cases, their responses in the pre-test were different. In the majority of cases, the agreed version is also the correct version. Important to note, however, is the fact that incorrect information can also be "learned". This underlines the importance of monitoring, intervention and feedback on the part of the teacher.

In other cases, the speech by the learner invokes feedback directly from a teacher. This can cause learners to modify and reprocess their output. If learners were not testing hypotheses, then Swain claims that changes in their output would not be expected following feedback. In her opinion, recent research including that of Pica, Holliday, Lewis and Morgenthaler, 1989, reviewed above (*Swain, 1995:131*) which demonstrates that learners modify their output in response to clarification or confirmation requests also supports this theory. Once again, Swain believes that this modified output may form part of the learner's interlanguage.

As we have just seen, one of the functions of output is, according to Swain, to test hypotheses about the language. When this is happening, it is assumed that the output produced represents the learner's hypothesis, or "best guess" as to how the language works. However, on another level, it is also possible for the learner to reflect with other learners on their hypotheses as to how the target language functions. Swain claims that this process of explicit reflection contributes to the process of language acquisition. She (*1995:132-140*) cites a number of examples which support this theory. These include in particular those conducted by Donato in 1994 and La Pierre in the same year.

Donato's study looked at the process of "collective scaffolding", or situations where, "...in social interaction a knowledgeable participant can create, by means of speech, supportive conditions in which the novice can participate, and extend current skills and knowledge to higher levels of competence" (*Donato, 1994:40*). He analysed protocols produced by three students of French in their third semester. The protocols were

recorded during a one hour session during which the students planned for an oral activity due to take place the following week. During the oral activity the students were to present a scene between a husband and wife just after the wife discovers that her husband has purchased a fur coat for another woman. The following extract, for example, demonstrates how the learners create a "scaffold" for each other:

- "1.... and then I'll say...*tu as souvenu notre anniversaire de mariage...or should I say mon anniversaire?*
2. *Tu as...*
3. *Tu as...*
1. *Tu as souvenu..."you remembered?"*
3. *Yeah, but isn't that reflexive? Tu t'as...*
2. *Oh, it's tu es*
1. *Tu es*
3. *Tu es, tu es, tu...*
1. *t'es, tu t'es*
3. *tu t'es*
1. *Tu t'es souvenu*
- (Donato, 1994:44 in Swain, 1995:138)*

In this example, the students have jointly produced the correct conjugation of the verb "to remember". They gradually use the information they are making explicit to reach this solution. Donato identified thirty two cases of scaffolding during the planning session. Swain accepts that the incidences of scaffolding also represent processes other than noticing, hypothesis testing and reflecting on language. She does however consider it to be significant that seventy five percent of the outcomes of the collective scaffolding were used correctly one week later and describes this as "impressive evidence of language learning" (1995:138). Swain also strengthens her argument by referring to the fact that Donato supports his findings using Vygotskian theory which argues "...that individual knowledge is socially and dialogically derived, the genesis of which can be observed directly in the interactions among speakers during problem solving tasks" (Donato, 1994:51).

The second study on which Swain bases her theory of the metalinguistic function of output was conducted in 1994 by La Pierre. La Pierre hypothesised that because pair work necessitated output, language learning would be more likely to occur among those working in pairs than those working individually. She also hypothesised that when learners reflected on the language they produced learning would result. The study involved grade eight immersion classes. The students were required to reconstruct a passage which had been read aloud to them twice and was based on grammar and vocabulary which they had recently covered. One class completed the task in pairs, the other individually. The first hypothesis that there would be a higher level of learning among those working in pairs was tested using a post-test which was designed to measure general comprehension of the passage and its vocabulary. However, no significant difference was determined between the two groups. This failure to identify a difference was attributed to a failure by the test to measure some of the learning which occurred. This point is discussed in more detail below.

The second hypothesis was measured using post-tests which were tailor-made for each individual pair. These were developed using the students' transcripts and therefore contained a set of questions for each pair of students reflecting language issues they had discussed when completing the task. The theory was that where students had reflected on language form and reached the correct solution they would answer the related question correctly. Where they had reached an incorrect solution they were expected to answer the question incorrectly. In other words, learning would have occurred (although unfortunately sometimes of the wrong thing). The results indicated that when a solution was reached it corresponded to students' responses one week later. More particularly, eighty percent of the correct solutions (of which there were one hundred and forty) were correct in the post-test. Seventy percent of the incorrect solutions (of which there were twenty one) were incorrect one week later, thus matching the solutions the pairs had arrived at. In Swain's opinion these results indicate that "...talk about form in the context of a meaning based task is output that promotes second language learning" (1995:140). Swain also infers from these findings that the learning which takes place as a result of this output is very much pair specific. She uses this fact to explain why the general comprehension test failed to capture the learning which had taken place. In her opinion,

students set their own agenda as to the aspects of language they discuss and in this case did not all focus on the purpose of the exercise which, at least for the teacher, was to revise the different past tenses.

Thus, according to Swain, output is capable of facilitating foreign language acquisition in four ways, in addition to those attributed to it by the input hypothesis. These are enhancing fluency, promoting noticing, facilitating hypothesis generation and testing and allowing reflection on form to take place among students. She does not however claim that all of these functions are being fulfilled at any one time and indeed emphasises that one of the tasks of future research will be to determine the conditions under which they do operate.

Swain was not, however, the first or only researcher to support the theory that output results in acquisition. Indeed, the role of interaction in the foreign language in the process of foreign language acquisition has long been central to work in this field. For example, Vygotsky, working in Russia in the early 1920s, conducted some initial work in this area primarily at the level of theoretical conceptualisation. Examination of the relationship between output and foreign language acquisition can also be traced to an article by Hatch (1978) in which she calls for a new approach to the study of foreign language acquisition. Contrary to the then emphasis on input and the widely held belief that conversational interaction served only to reinforce or practise grammatical features, structures and rules that had been presented in the classroom, Hatch argues that "One learns how to do conversation, one learns how to interact verbally, and out of this interaction syntactic structures are developed" (Hatch, 1978). Hatch's evidence for her claim is based on studies of children acquiring first and second languages and on reports of adults learning second languages.

Bygate (1988), in his paper on possible connections between small group oral interaction and language acquisition, further argues that oral interaction may assist language development in that it offers the learners flexibility in choosing the most effective syntactic units for communication. This enables them to follow their own path towards integrating the grammar of the language into their oral skills. Gregg (1984) also argues

that a lack of evidence exists for the argument that speaking does not aid in acquisition, compared to the often held belief that speaking is indeed helpful to acquisition. McLaughlin (1987) is of the opinion that access to one's speech is an important source of information in a hypothesis-testing view of language. Similarly, Mackey (1997) stresses that the relationship between language learning and use is a bi-directional one, while Salaberry (1997:422) comments that his experimental results indicate that both input and output processing have a significant positive impact on the learning of Spanish clitic pronouns. Swain was, however, among the first to gather what she believes to be the principal functions of producing comprehensible output in one comprehensive hypothesis.

Krashen's response to the output hypotheses was to reiterate his acquisition learning hypothesis and to stress his "no-interface" position, i.e. that learnt knowledge cannot become acquired knowledge and that it is acquired knowledge that is of primary importance in day-to-day communication with learnt knowledge capable only of acting as a Monitor. In his view the production of output can result in learning but not in acquisition (1989:441). He further states that output with feedback may produce some competence but the competence is learned not acquired and thus, in his opinion, of limited value. Krashen claims that when output/feedback based classes work it could still be due to the presence of comprehensible input. He predicts that the effects of production will be small, compared to the effects of exposure to comprehensible input (Krashen, 1989:448). Therefore, while he accepts that both input and output play a role in learning/acquisition, they are in his opinion unequal partners. Krashen (1994) makes a number of claims in support of this position.

Firstly, he claims that only comprehensible input is consistently effective in increasing proficiency. Krashen cites a number of studies, primarily from the field of second language acquisition in support of this claim. These include several where length of residence in a country was shown to correlate with levels of proficiency. It is of course difficult to argue against the point that length of residence in a country not only increases the quantity of input to which the learner is exposed but also the quantity of opportunities to produce output. Krashen does agree that a number of studies (reviewed

in Chaudron, 1988) do show a positive correlation between student oral output and proficiency. He argues, however, that since these studies are correlational, there is no way of knowing if the increase in output might be a result of the increase in proficiency (resulting from exposure to input) rather than its cause. It does seem more likely, however, that the relationship between output and proficiency is a bi-directional one.

Krashen's second claim is that studies comparing the effectiveness of different teaching methods reveal that input based methods are superior. He quotes for example Ramsey (1991) who discovered that second year French students who were exposed to less grammar equalled a group exposed to more grammar on a dictation and listening comprehension test and were significantly better on a grammar test. He also quotes Nicola (1989) and Lightbown (1992) who reached similar conclusions. However, it is not necessarily the case that the classes described by Krashen as "more grammatical" necessarily involved the participating students in producing more comprehensible output. It is also not argued by Swain that output has a more important role to play than input but rather that output also has a significant role to play in the process of foreign language acquisition.

Krashen's next argument is that research (*for example Swain, 1988*) has shown that immersion learners in a classroom setting often have very little opportunity to produce output but still manage to acquire large amounts of language competence. Krashen concludes from this that output does not have a direct role to play in language acquisition. However, as we have seen Swain has used these very findings in support of the output hypothesis, arguing that although these learners have achieved a high level of competence, deficiencies remain particularly in the area of accuracy. Thus, while reiterating the importance of input, a fact not denied by the output hypothesis, Krashen's evidence fails to prove that output does not also have a significant role to play in the development of proficiency.

The output hypothesis has, nevertheless, been criticised by researchers other than Krashen on a number of fronts. Firstly, several researchers including, for example, De Bot (1996:535) are still of the opinion that there is little hard evidence available to

support it. Nobuyoshi and Ellis (1993) agree that output may lead to better control of features that are already acquired, but argue that it remains unclear whether it can result in the acquisition of new linguistic features. Furthermore, even if we accept that noticing, hypothesis testing and metalinguistic reflection occur when the learner speaks, the extent to which they contribute to the process of foreign language acquisition remains a somewhat controversial question, in need of further clarification. Given the relative recency of this theory though, the fact that areas in need of clarification and further research remain is hardly surprising.

A further criticism levelled against the output hypothesis, which indeed applies to an even greater extent to the input hypothesis⁷, is that it fails to sufficiently explain the mental processes which take place as production leads to learning/acquisition. De Bot (1996) suggested that a move into the realm of cognitive science might shed additional light on these processes and move some way towards such an explanation. Cognitive theory concerns itself primarily with the psycholinguistic processes by which input or output might lead to language acquisition. The following section examines key aspects of this area and then examines attempts to explain the development of oral proficiency in its terms.

1.24 Cognitive Science

The majority of existing theories of foreign language acquisition, including those just analysed, assume that language is represented and acquired by the human mind in ways that are different from any other knowledge. This assumption is represented in analyses of unique language properties including developmental language order, grammar, knowledge of language structures, social and contextual influences on language use, and in the distinction between learning and acquisition. Cognitive processes, when represented at all in these theories, are generally concerned with aspects of learning style and other predispositions for learning. Cognitive theory, on the other hand, is based on the assumption that language can be accommodated within the broader framework of the processes by which people store and acquire knowledge in general. In other words, it

⁷ In the words of Cook (1993:58), Krashen, "... is concerned with the properties of the input, rather than the processes of the mind: he leaves the process of acquisition as mysterious as ever...".

views language as a complex cognitive skill, acquired by the same means as any other such skill.

Cognitive theory is based on the work of both psychologists and psycholinguists. Within the framework of this theory, the principles and findings of contemporary cognitive psychology are applied to the process of foreign language acquisition. Research in this area was originally related to behaviourist attempts to explain the learning process⁸.

One such attempt is Bloomfield's behaviourist theory that language learning is a matter of associating words with objects (*Bloomfield, 1933*). According to Bloomfield, a child who imitates an adult saying "doll" is favourably reinforced whenever a doll is present at the same time and unfavourably reinforced whenever the doll is absent. The most sophisticated behaviourist account is that provided by Skinner in 1957 in his book *Verbal Behaviour*. According to this book, language is learnt through "verbal operants". These are controlled by the situation which, according to Skinner, is created by factors such as social context and the individual's past history. An example of an operant is the "mand" which is like a command and is reinforced by someone carrying it out and another is the "tact", which is associated with contact and is reinforced by social approval. This theory postulates that a child builds up the complex use of language by interacting with people in a given situation for a particular purpose.

Despite the fact that Skinner's theory was rejected by Chomsky in 1959, a number of affiliated cognitive theories of language acquisition have since appeared. These include, in particular, Anderson's ACT-R model, McLaughlin's information processing approach and Rumelhart and McClelland's work in the area of connectionism. Each of these is now examined in turn.

Anderson's ACT-R Model (with "ACT" standing for "Adaptive Control of Thought" and the 'R' representing the ultimate in a series of models (*Anderson, 1993*)) distinguishes three forms of memory, working, declarative and procedural and two types of knowledge, declarative and procedural.

⁸ Cognitivism and behaviourism are now, however, two distinct fields in the domain of learning theory (see for example Gage and Berliner, 1991, chapters six and seven).

Declarative memory is capable of storing information (declarative knowledge) in the form of cognitive units such as propositions or images. According to Anderson, these "propositional representations" maintain the meaning of information while ignoring unimportant details. Each proposition is denoted by a relation followed by a list of arguments. In an example used by Anderson (1985) "Nixon gave a beautiful Cadillac to Brezhnev, who is leader of the USSR". Here the relations correspond to the verbs (give, is), adjectives (beautiful), other relational terms (leader of), while the arguments correspond to the nouns (Nixon, Cadillac, Brezhnev). The full ordered list of relations in this sentence includes the agent of giving, the object given, the recipient of the giving, and the time of the giving, for example (Give, Nixon, Cadillac, Brezhnev, Past). Furthermore, each complex sentence is differentiated into a number of simpler propositions such as "Nixon gave a Cadillac to Brezhnev. The Cadillac was beautiful. Brezhnev is the leader of the USSR". These simpler propositions could be used to generate another original sentence with the same meaning such as for example "The leader of the USSR, Brezhnev, was given a Cadillac by Nixon and it was beautiful".

Anderson argues that these relations and arguments can be represented in a "propositional network" (*see for example O'Malley and Chamot, 1993:22*). In such a network, each proposition is represented by a circle which is connected by labelled arrows to its relations and arguments. The basic element of the network is the "node" denoted by figures in the circles. The arrows connecting each node to its relations and arguments are known as "links". The nodes are similar to ideas while the links represent associations. The advantage in such an approach, involving schematic depiction, is that the associations among ideas are depicted graphically. A further important feature of propositional networks is that they permit "spreading activation". This involves the activation of additional concepts in response to the activation of a single concept. For example, when the word Cadillac appears other associations with which it is linked, such as wealth, decadence and quality may be activated. The same process may occur in response to the mention of Brezhnev. These additional associations add meaning to the sentence. They are, however, specific to the individual hearing or reading the sentence. Anderson suggests that working memory could be defined as the range of nodes reached by spreading activation. Finally, larger units of meaning than can be represented by

propositional networks require a schema or "...configuration of interrelated concepts that define a concept" (*O'Malley and Chamot, 1993:23*). Schemata may be composed of propositional networks but they are more complex in that any of the attributes in a schema may take on different values. For example, the schema for "wheel" could include the link "object that rolls". Within this superset, it could be further linked with "ball" and "cylinder" which in turn could activate further links.

According to Anderson, the procedural memory, on the other hand, stores procedural knowledge. Our ability to understand and generate language or apply our knowledge of rules to solve a problem would be examples of such knowledge, as would the ability to drive a car. He (*1985*) also believed that, as we use the same declarative knowledge repeatedly in a procedure we lose conscious access to the rules that originally permitted us to complete the procedure. He further stresses that while declarative knowledge or factual knowledge may be acquired quickly, procedural knowledge such as language acquisition is acquired gradually.

A key concept in Anderson's model relates to the question of how procedural knowledge is represented in memory. According to Anderson, it is contained in the production systems, which are made up of production rules. A production rule consists of an "if then" statement in the form of "if x is true then do y". Examples include "if the goal is to generate the plural of a noun and the noun ends in a hard consonant then generate the noun plus "s". Another example in a paraphrased form would be "if you want to say something about an agent being related to an object, then you have to first describe the agent, then the relationship and finally the object" (*Anderson, 1980:239*). Condition-action pairs such as these can initially be represented in declarative form and gradually through practice approach the point of automatic execution.

Anderson further claims that when learning anything new, the mind moves from declarative to procedural knowledge in three stages. The first stage is known as the declarative (or cognitive) stage. Here new information is perceived as declarative facts. Anderson believes that when the mind starts to learn a new production rule it has no preconceived procedures and therefore relies on declarative knowledge. At this stage,

learners are instructed how to do the task, observe an expert performing it or attempt to figure it out and study it themselves. The acquired knowledge at this stage is typically declarative and can be described verbally. For example, language learners can memorise vocabulary and grammatical rules in the same way as they can memorise any other set of facts. This knowledge enables them to describe how to communicate in the foreign language, but this knowledge itself is inadequate for skilled performance which at this stage is often laboured and littered with errors. In particular, this stage is characterised by intensive attention to the new language and deliberate efforts to make sense of it.

The second stage is known as the knowledge compilation or associative stage. Here the mind restructures and organises the declarative facts obtained during stage one. One form of knowledge compilation is known as "composition". During this process, several productions are collapsed into one. For example MacWhinney and Anderson (1986:20-21) suggest that a rule for producing agent-object relations could be collapsed with a rule for producing the present continuous to get a single rule for present continuous sentences. It is also during this stage that errors in the declarative information are gradually detected and eliminated. At the same time an interconnected process which Anderson calls "proceduralisation" is taking place. O'Malley and Chamot (1993:26) describe this process as one whereby "...the learner generates a propositional representation of a sequence of actions and converts this propositional representation into production systems". Gradually, the production rule becomes more automatic and it becomes possible to apply it with less conscious attention. It is here then that declarative knowledge is turned into its procedural form. However, the declarative form is not always lost. For example, even as fluency increases in a foreign language, the learner can still remember the rules of grammar.

It is also at this point that performance begins to represent expert performance although it may still be somewhat slower with a number of errors continuing to occur (*de Bot, 1996:546-7; O'Malley and Chamot, 1993:26*). Indeed, some researchers suggest that this second stage corresponds with the production of "interlanguage", an intermediary form of language produced by learners which is temporary and characterised by errors. At this stage, the learner can use the foreign language for communication, albeit

imperfect, but has difficulties using the language as a tool for considering complex information. This is owing to the fact that a large amount of active attention is still being given to the language itself.

In the third, autonomous stage, the mind fine-tunes the productions by generalising them to other conditions, for example by discovering that the word "good" in "good girl" is the same as the "good" in "good girls". Tuning productions can also involve discrimination of the situations in which they can be used, for example, by distinguishing when a verb needs past and present forms. The performance of the skill becomes virtually automatic in the autonomous stage and the majority of remaining errors disappear. At this stage execution of the skill places much less demand on working memory. The language learner is now capable of using the foreign language for functional purposes, be they academic, social or technical. They can now process new information at the same time as the language is in use. At this stage, then, it is possible for the learner to complete the three stages of speech production described in Levelt's model (Section 1.1), conceptualisation, formulation and articulation, using very little of the limited processing capacity available in the working memory.

The hypothesising in the area of cognitive theory tends to relate to language acquisition in general and does not tend to focus on any one particular skill. An exception to this rule can be found in the work of De Bot (1996) who suggests that speaking in the foreign language may assist in the transition from declarative to procedural knowledge. After analysing the results of a series of think-aloud protocols he concludes that. "Output plays a direct role in enhancing fluency by turning declarative knowledge into procedural knowledge" (de Bot, 1996:553). His explanation for this is that making an association or conducting a procedure actively, i.e. in production, is more effective than passively perceiving its existence in input. He feels that in production more attention is likely to be focused on the association or procedure. Similarly, R. Ellis (1994a) argues that one of the benefits of producing output is that it allows both implicit and explicit knowledge to become automatised. De Bot further claims that output can also play an indirect role in the acquisition of declarative knowledge by triggering highly specific input that the learner can use for the generation of new declarative knowledge and the building up of a

coherent set of rules (*de Bot, 1996:529*). It does not, however, assist directly in the acquisition of completely new declarative knowledge as, according to de Bot, this requires external input.

Although Anderson's theory is by nature difficult to test empirically, a number of researchers including Dechert, Moehle and Raupach (*1984*), working in Kassel, have attempted to link their research on language acquisition to his stages of learning and distinction between declarative and procedural memory. They are of the opinion that speech produced from procedural memory should be more fluent than that produced from declarative memory. Dechert (*1986*) claims for example that the smooth production of a German translation "zum Beispiel" (for example) demonstrates "totally proceduralised retrieval".

These researchers have applied psycholinguistic measures such as "temporal variables" to the speech of adult German learners of French. The temporal variables include pauses and more specifically their length and duration. Smooth production is attributed to procedural learning and more hesitant sections to declarative knowledge.

In one study, Raupach (*1987*) notes a progression in the improved fluency of six German students after a term in France. He measured fluency in the form of "run" of speech uninterrupted by pauses and found that the average number of syllables increased from 5.90 to 8.43 (compared to a score of 14.43 for a control of native speakers). Raupach also compares the speech of another student before and after a term in France. The main changes include a reduction in the time spent pausing from 37.56 to 30.39 percent, an increase in the length of uninterrupted speech, a reduction in the number of hesitations, for example before genders.

Raupach concludes that Anderson's learning progression from the declarative to the procedural stage can be applied to foreign language acquisition, although he qualifies this by stating that the progression does not occur in a straightforward manner, that other mechanisms are involved and that the process varies from one individual to another.

While the experimental results discussed above appear to support Anderson's theory, they are not conclusive, as they depend on the strength of the link between such psycholinguistic measures as runs, speed and pauses, on the one hand, and procedural and declarative memory, on the other. They also concentrate solely on fluency and do not address the question of accuracy directly. Several other researchers have, however, reached similar conclusions. For example, Towell (1987) reports on a learner who improves over a period of four years from a speaking rate of 122.46 speaking syllables per minute to 177.45 and from a pause ratio of 52.59 percent to 78.5 percent. Towell argues that learners use "chunks" including for example the French formula "c'est" (that's) , as declarative knowledge which gradually becomes part of their procedural knowledge. Thus, Towell views an increase in fluency as dependent on the reorganising of declarative "facts" into more efficient procedures.

McLaughlin's information processing approach uses different terminology to that in the model proposed by Anderson. His theory displays, however, a number of important similarities. Firstly, McLaughlin distinguishes between automatic and controlled processes. An automatic process requires very little attention as it has been built up by practice (in Anderson's terms "become proceduralised"). Such processes result from the activation of memory associations that have already been thoroughly learned. A controlled process, on the other hand, has not been repeated in the past to the same extent. It therefore entails the learning of new associations and requires a great deal more time and attention.

According to McLaughlin, individuals acquire mastery over complex new skills through performing aspects of the skill that require little processing capacity and can be carried out "automatically". This frees attentional resources for other aspects that require conscious effort or "controlled" processing. Gradually as the learner gets more used to handling these latter aspects, the controlled processing becomes more automatic. Thus, according to McLaughlin et al (1983:141), "... controlled processing can be said to lay down the 'stepping stones' for automatic processing as the learner moves to more and more difficult levels".

Secondly, like Anderson, McLaughlin also stresses that there is more to the acquisition of a complex cognitive skill than automatization. He argues that the learner needs to organise and structure (or "compile") the information that has been acquired (McLaughlin, 1987:136). He feels that as more learning occurs, cognitive representations change and are restructured. According to O'Malley and Chamot (1993:66), this restructuring often results in greater efficiencies in producing the skill or in applying it in novel situations. This is a result of the realisations that emerge from establishing links between the skill and other associations.

Like Anderson, McLaughlin bases his theory on experiments demonstrating speed of reaction at different proficiency levels. For example, a number of experiments have shown that the rate of reaction of learners on a task in the target language is slower than that of native speakers and also that among the learners, the speed increases with increased experience of the foreign language. For example, in an experiment conducted by Magiste (1979), picture naming and numbering took longer for learners of the foreign language than for native speakers. Furthermore, the speed of the learners increased slowly over a period of five years. While these findings do not prove McLaughlin's theory, he argues that they at least suggest a movement from controlled to automatic processing among the learners. A number of experiments in the area of vocabulary acquisition are also used in support of an information processing approach. For example Cook (1996:162), in interpreting the results of such experiments, suggests that a continuum exists from "lower" to "higher" skills. He suggests, as does McLaughlin, that students who do not progress in the foreign language are not making the lower level skills automatic. Thus, children learning to read in a foreign language may be held back by not having learnt the lower level skill of predicting which words come next.

The principle difficulty with cognitive theory is probably its rule-bound nature. Both Anderson's and McLaughlin's models assume that individuals will learn the rules underlying performance of a complex skill as a precursor to competent and automatic skill execution. Although these models do not claim that this is the only way in which a foreign language can be acquired, they do not describe any other possible processes. The difficulty here is that not all of the rules of language are known and no learner can know

all of them. Indeed, a similar argument was proposed by Krashen in his rejection of the output hypothesis's ability to explain all of foreign language acquisition (Section 1.23). Unlike Krashen, however, who argued that this proved that an additional process, acquisition, was occurring, O'Malley and Chamot (1993:28) argue that a cognitive perspective is sufficiently flexible to incorporate both informal rules or the "rules" generated by learners to explain their experience with a language as well as the more formal rules. They further argue (1993:69) that it is important to consider the idea of a "rule" in its broadest sense and stress that rules apply to all aspects of language and are not limited to systematic rules of grammar. For example, Canale and Swain (1980; see also Section 2.253) define the four components of communicative competence as the ability to use grammatical, sociolinguistic, discourse and strategic skills. Thus the rules of grammar are only part of the declarative knowledge required by a learner if they are to become communicatively competent.

A number of difficulties remain, however, with the application of cognitive theory to foreign language acquisition. Firstly, cognitive theory is highly inductive and there have been relatively few attempts to test its predictions for language acquisition empirically. Secondly, a number of researchers, including McLaughlin (1987:151), argue that the range of phenomena that have to date been accommodated by this theory is relatively restricted. Cook (1993:269) agrees that at present cognitive theory has a rather small coverage of language and language acquisition. In his opinion, cognitive theory examines surface phenomena and simple learning constructs rather than the full complexity of linguistic approaches. McLaughlin further suggests that since cognitive theory concentrates on viewing language acquisition as a complex cognitive skill, it ignores broader issues concerning, for example, motivation and affective factors. This criticism could, however, also be levelled at many theories in the field of foreign language acquisition and McLaughlin and Cook, nevertheless, believe cognitive theory to be capable of providing important insights into the process of foreign language acquisition.

Finally, a third related area which looks promising for the further development of a cognitive approach to language acquisition is "connectionism". According to connectionist theory, learning is the establishment and strengthening of vast numbers of

connections in the mind. It is primarily based on the concept of strength of association. It may therefore be particularly useful in investigating how associations are formed as a result of exposure to or production of language.

Connectionist methodology is computer based and involves the inputting of language data into a computer's network in order to see whether it can "learn" the syntactic regularities. The pioneers in this field were Rumelhart and McClelland (1986). They were concerned primarily with the area of first language acquisition. A study they conducted demonstrates that a simple learning model is capable of reproducing the characteristics exhibited by young children learning the morphology of the past tense in English. The model generated the "U-shaped" learning form for irregular forms, it displays a tendency to overgeneralise and, as is the case with children, different past tense forms for the same word can co-exist at the same time. The computer had, however, not been taught a rule. Despite this, its output mimics that normally produced by learners who had been given rules. Rumelhart and McClelland deduce from this that the system stores a set of rote-associations between base and past-tense forms with new responses generated on the basis of generalisations from the examples stored.

Blackwell and Broeder (1992) were among the first to attempt to extend connectionist theory to the area of foreign language acquisition. They managed to get a computer to learn Arabic and Turkish pronouns based on their frequency in language input to learners. They also found that the computer duplicated the order of acquisition found in a study of four learners.

Connectionism advocates an implicit learning approach. In the future, it may be useful in assessing how much foreign language acquisition can result from an extraction of the regularities in language. To date, however, its application to foreign language acquisition has been limited. Furthermore, a number of cognitivist researchers have expressed some doubt as to the extent to which connectionist systems are capable of showing the properties of a structured-symbolic rule system. In other words, such a system may be capable of incorporating only a small portion of the full systematicity of language and would therefore be inadequate in dealing with a complete linguistic structure.

In conclusion, the individual theories found under the broader umbrella of cognitive theory have a number of important characteristics in common. To begin with, they concentrate on the mental processes or system internal factors involved in the process of language acquisition. In particular, they view the mind as a vast network in which everything is connected, and learning as the acquisition of a complex cognitive skill. Learning is, therefore, viewed as consisting of two key steps. One involves the restructuring of new information as it is received and the learner becomes increasingly proficient. The other is a progress from this declarative "controlled" knowledge to procedural "automatic" processes through repetition and practice. As a result of this progression, component skills become automatized and controlled processes are freed for other functions. Cognitive theory has, however, at present a limited coverage of the full range of linguistic phenomena. Nor does it concern itself to any great extent with external factors such as the quality of input, the impact of the production of output or the active mental processes engaged in by students as they receive input or produce output.

1.25 Conclusion

Thus, this section reviews a selection of hypotheses and theories in the field of foreign language acquisition and the related area of cognitive science, relevant to the development of oral proficiency in a formal learning environment. These are Krashen's Input and Swain's output hypotheses, Anderson's A.C.T-R model, McLaughlin's information processing approach and connectionism. Each of these theories attempts to explain how a foreign language is acquired, albeit from different perspectives.

The central premises of each theory are as follows: The Input hypothesis is an inductive theory based on the assumption that two mechanisms are involved in becoming proficient in a language, acquisition and learning. This theory considers acquisition to be the more important of these mechanisms. It also argues that the most efficient way for acquisition to occur is for the learner to be exposed to and to attempt to understand comprehensible input which is slightly above their level of proficiency. Learned material is acquired consciously, is capable only of "Monitoring" the output of the learner and never merges with acquired material. With regard to oral skills, this theory posits that speaking is a

result of acquisition and not its cause. In other words, internal processing mechanisms operate on the input from the language environment and are not directly dependent on the learners' attempts to produce the language themselves. Learners' utterances are a natural outcome of the system they have acquired rather than a factor contributing to the process of acquisition. The Input hypothesis, however, does not reject the possibility that speaking may result in conscious learning.

The output hypothesis, in contrast, provides support for the view that the production of output, particularly during interaction, provides both the occasion for the learning of new language material as well as the evidence for it. It rejects the assumption that learned and acquired material never merge and argues that pushing learners to produce meaningful output can contribute directly to the learning/acquisition process in a number of ways. These include increasing fluency in the foreign language, promoting noticing of gaps in linguistic knowledge, facilitating the generation and testing of hypotheses as to how the language works and encouraging metalinguistic reflection on the foreign language in question. The output hypothesis does not, however, reject the claim that exposure to comprehensible input can contribute to the process of foreign language acquisition/learning

Finally, the two principal theories in the area of cognitive science, the A.C.T -R model and information processing perceive learning as a development from controlled to automatic processing. According to these theories, language acquisition has two stages, a declarative stage and a procedural stage. In the declarative stage learners acquire isolated facts and rules that can be applied in specific tasks. Through frequent use these facts and rules are formalised and become procedures. Declarative-stage processing is slow and more or less open to conscious manipulation. However, procedural-stage processing is fast and beyond conscious control. Proceduralisation takes place with increasingly larger units of information, leading to automatic processing of these units. Connectionism emphasises the importance of associating new with previously learned material and the implicit learning of rules using examples.

The above theories envisage alternative routes to the same goal. However, they differ in a number of important aspects. These include the degree to which they attempt to explain the mental processes involved in the development of proficiency or how exposure to input or production of output result in foreign language acquisition. For example, the Input hypothesis uses a black-box approach. It merely claims that understanding comprehensible input results in acquisition as a result of the Language Acquisition Device without actually explaining how. In other words, the model does not interest itself in how comprehensible input is dealt with by the mind as, in Krashen's opinion, conditions for successful acquisition matter more than the processes of acquisition.⁹ The output hypothesis offers four possible explanations as to how output facilitates foreign language acquisition in ways that are different from or may even enhance those of input. These are increasing fluency, promoting noticing, facilitating hypothesis testing and allowing metalinguistic processing to take place. Finally, the theories related to cognitive science concentrate almost entirely on the internal mechanisms facilitating the process of foreign language acquisition and emphasise the importance of repetition and practice in the process of automatisisation. They also argue that output can only be used for the purpose of proceduralisation and plays an indirect role in the acquisition of new declarative knowledge. It is likely that the suggestions made by both the output and cognitive theories as to the mental processes involved in foreign language acquisition are correct to differing extents for different students under different conditions. Which are most important in a formal classroom environment remains unclear. Furthermore, given the complex nature of foreign language acquisition, it is highly unlikely that these models succeed in providing a complete picture.

Secondly, the models, particularly the first two, differ in terms of the importance attributed to exposure to comprehensible input and the production of comprehensible output in the process of foreign language acquisition. This difference is, however, intertwined with the question as to whether learned and acquired material remain separate in the mind or not. The Input hypothesis postulates that learned material can never merge with acquired material. However, there is no clear evidence of this. Indeed,

⁹ This view is, however, rejected by O'Malley and Chamot (1993:81) in their comment that, "A cognitive model of second language acquisition sees conscious processes involved in all language settings, at least in the initial stages of learning. These processes can be described and used to assist learning instead of being relegated to the uncertainty of unconscious mechanisms".

many researchers consider it to be unlikely in the light of what is known about cognitive processes in general and argue that the two systems can "bleed" into one another. This position is supported by the experience of many teachers and learners. If we accept it to be the case, then the Input and the output hypotheses become complementary rather than oppositional theories, in that they both see a role for input and output in the process of foreign language acquisition.

The Input hypothesis nevertheless argues that exposure to comprehensible input is the most important variable. The output hypothesis accepts the importance of comprehensible input but argues that output also has a role to play. In contrast with the Input hypothesis, it argues that this role is an important one.

Thus, several key questions remain unanswered by the theories of foreign language acquisition reviewed above. These relate primarily to the ways in which exposure to comprehensible input and the production of comprehensible output result in foreign language acquisition, in particular the development of oral proficiency. A second fundamental question concerns the relative importance of exposure to comprehensible input and production of comprehensible output in a formal foreign language learning environment. The above theories also leave questions unanswered relating to how students should be exposed to comprehensible input or the types of comprehensible output they should be required to produce in order to best facilitate the acquisition of proficiency.

Furthermore, the central objective of this research is to investigate the learning approaches associated with the achievement of higher levels of oral proficiency. In order to achieve this objective, it is necessary to move beyond explanations of the processes and variables involved in foreign language acquisition towards attempts to understand how learners actively control some of these processes and variables in order to better facilitate the development of proficiency. This brings us into the realm of learning strategy theory.

SPEECH PRODUCTION AND THE DEVELOPMENT OF ORAL PROFICIENCY

The following chapter reviews the key concepts and findings in the area of learning style and strategy research, both in general terms and with particular reference to the development of oral proficiency.

Chapter Two

Language Learning Styles and Strategies: Some Key Concepts and Studies

Overview

The purpose of this chapter is to review research in the fields of language learning styles and strategies. It begins by looking at the definition and measurement of learning styles, their ability to predict learning outcomes and their influence on a learner's choice of language learning strategies.

It then evaluates attempts to define, classify and measure language learning strategies as well as to identify those factors which influence a learner's strategic behaviour. The chapter concludes with an examination of research designed to identify those learning strategies most likely to enhance learning outcomes, and in particular the level of oral proficiency attained.

2.1 Language Learning Styles

Learning styles are the approaches students are predominantly disposed to use in order to learn a new language (*Ehrman and Oxford, 1995:69*). They have been seen to encompass four aspects of the learner, the first being cognitive style, i.e. preferred or habitual patterns of mental functioning. The second aspect is concerned with patterns of attitudes and interests that influence what a person will pay most attention to in a learning situation. A tendency to seek situations compatible with one's own learning patterns makes up the third aspect, while the fourth encompasses a disposition to use certain learning tools or strategies and avoid others (*Wallace and Oxford, 1992, Willing, 1988*).

A considerable amount of research in the area of learning styles has been devoted to the identification of style types. It is now thought that individuals' learning styles consist of a composite of positions on at least twenty style dimensions or continua (*Ehrman and Oxford, 1995:311; Oxford, 1992:441; Oxford, 1993a*). Some of these are overlapping and others independent of each other.

The dimensions have been derived from at least three traditions. These are the study of perception and Gestalt psychology, ego psychology, and the theories of the Swiss psychologist, Carl G. Jung (*Jung, 1921*). They include, in particular, the following polar extremes: analytic/global, visual/auditory/hands-on (which includes both kinaesthetic and tactile), introversion/extroversion, sensing/intuition, thinking/feeling, judging/perceiving and reflection/impulsivity (*Oxford and Anderson, 1995:203*). Learners are assumed to use both poles of each of the scales sometimes but to respond first or most often in a preferred style (*Ehrman and Oxford, 1995:311*). Each of the continua is now discussed in turn with particular reference to their implications for the language learner.

Students closer to the analytic end of the analytic/global continuum tend to concentrate on grammatical rules and details, word analysis and language comparisons. They generally enjoy dissecting words and sentences but dislike guessing without adequate time to reflect. They avoid compensatory approaches such as paraphrasing, preferring to

look up the exact word in the dictionary. Analytic students also prefer not to engage in free flowing, communicative activities. Global or holistic students, in contrast, prefer conversation to rule learning or analysis. They prefer a socially interactive, communicative approach and concentrate on the main idea as opposed to details. A student with a global learning style sometimes has difficulty discerning important details from a confusing background (i.e. is field-dependent) and can tend towards inaccuracy (*Ellis, 1989, Kinsella, 1995*).

With regard to learning modality preferences, visual learners gravitate towards reading and require visual back-up to support oral communication. Lectures, conversations and oral directions without any visual back-up can be both confusing and anxiety producing for them. Auditory students are comfortable without visual input and tend to like multiple sources of aural input. They sometimes, however, have difficulty with written work. Hands-on (sometimes called "haptic", a combination of kinaesthetic or movement oriented and tactile or touch oriented) students enjoy movement and the manipulation of tangible objects in the classroom. They dislike sitting at a desk for long periods of time (*Oxford and Anderson, 1995:209*).

Extroverts, unlike introverts, tend to be willing to speak in class and interact with other students and the teacher. They gain their energy and focus from events and people outside of themselves and tend to enjoy group work and engaging in conversation. Introverted learners, are stimulated by their inner world of ideas and feelings. They like to work alone or with someone they know well, prefer written performance and are often unenthusiastic about standard forms of group work. Introverts generally focus their perception and judgement on concepts and ideas while extroverts concentrate on people and objects (*Kiany, 1997:115, Myers and McCaulley, 1985, Oxford, Ehrman and Lavine, 1991*).

Intuitive learners think in abstract, large-scale, random and futuristic ways; they look for the basic principles of the language system, enjoy variation and tend to dislike concrete step-by-step learning. They are often able to distil the main principles of how a new language works and understand its underlying system. In general terms, they tend to

focus on meanings, relationships and possibilities. Sensing learners on the other hand prefer observable facts to abstractions. They generally do not focus on the underlying principles and prefer concrete, sequential learning. Frequently slow and steady, they progress at their own rate and are thorough and patient with details. They can achieve goals that are made clear to them in advance but have difficulty with randomness and lack of consistency (*Briggs, 1980*).

Thinking students prefer logical and impersonal processing and are sometimes prone to perfectionistic performance anxiety. They tend to be objectively oriented and systematic. Feeling oriented learners, in contrast, tend towards affective and personal problem solving. They are more sensitive to social and emotional factors and they are likely to be influenced by the feelings of others, the emotional climate and personal and interpersonal values (*Briggs, 1980, Myers and McCaulley, 1985*).

Judgers display a "closure-oriented" approach and are likely to plan language study sessions carefully and do lessons on time or early. In other words, they like structure and clarity, and are deadline conscious, product oriented learners. In order to avoid ambiguity, they will sometimes jump to hasty conclusions about grammar rules or reading themes (*Ely, 1995:92*). Perceivers are often less concerned about meeting requirements and more comfortable in a classroom based on a less structured communicative methodology. They generally have a high tolerance of ambiguity, do not worry about comprehending everything at once and do not feel the need to come to rapid conclusions about a topic. They also tend to be more curious, open-minded and adaptable to changing situations (*Lawrence, 1984*).

Finally, the dimension reflection/impulsivity embodies the polar opposites of the slower, systematic investigation of hypotheses as opposed to their quicker acceptance. Reflective students tend to be both slow and accurate, while impulsive students tend to be both fast and inaccurate. Of course, other possible combinations exist including fast and accurate, and slow and inaccurate. Together, these four possibilities reflective, impulsive, fast and accurate, and slow and inaccurate comprise the range of what is often called the "conceptual tempo" (*Oxford and Anderson, 1995:206*).

In terms of the identification and assessment of learning styles, a number of instruments are available including "Your Style of Learning and Thinking" by Torrance, Reynolds, Riegel and Ball, "The Learning Style Preference Checklist" by O'Brien and the "Style Orientation Survey" by Oxford (*Oxford, 1992:43*). Others include the "Style Analysis Survey" by Oxford and the "Keirsey Temperament Sorter" (*Oxford, 1993b:37*). However, two instruments are most widely used. These are the "Kolb Learning Styles Inventory" and, in particular, the "Myers-Briggs Type Indicator" (MBTI).

The Kolb Learning Styles Inventory is frequently used in curricular design. It is based on the following cognitive style dimensions: reflective observation (watching) versus active experimentation (doing) and concrete experience (feeling) versus abstract conceptualisation (thinking). The MBTI, on the other hand, is a 126-item, forced choice, normative, self-report inventory. It is derived from Jung's theory of psychological type as expanded by the work of Isabell Briggs Myers (*Myers 1962, 1987*). From self-report, the MBTI attempts to identify individuals' basic preferences in terms of their habitual use of perception and judgement. As with style types, each of the MBTI's scales represent polar opposites. The four bipolar scales which make up the MBTI, extroversion-introversion (E-I), sensing-intuition (S-I), feeling-thinking (F-T) and judging-perceiving (J-P) are independent of each other and therefore combine to yield a total of sixteen different combinations: ISTJ, ESTJ, ISFJ, INTP, ENTP and so on.

A limited number of studies have been conducted to determine whether learning styles can predict proficiency. Accepting that different courses and assessment procedures favour different learning styles, a number of tentative patterns are beginning to emerge. One of the first studies was conducted by Parry (*1984*). He discovered that learners closer to the impulsive end of the continuum can have problems due to premature, inaccurate responses and that reflectives may perform more successfully. However, perfectionism (too much concern for accuracy) can become destructive anxiety, which may diminish language learning performance (*Ehrman and Oxford, 1988*). Thus, if carried too far, reflection can become immobilising.

In a more detailed study of twenty students at the American Foreign Service Institute, conducted by Ehrman and Oxford (1990), those closer to the introvert, intuitive, feeling and perceiver ends of the respective continua achieved significantly higher proficiency ratings in their particular foreign language. The proficiency ratings in this study represent a consensus of opinion among the teachers involved in this intensive, communicative language training programme as to the candidate's "overall success as a language student" (Ehrman and Oxford, 1990:315). The authors suggest that introversion may be advantageous in their classrooms which require concentrated study and focus. Intuition, they propose, shows natural inferencing and pattern seeking tendencies useful in class. The advantage for feelers may relate to social factors and also to the fact that they suffer from performance anxiety less often than thinkers. Finally, the flexibility and openness of perceivers may have served them well. The authors also explain the success of perceivers in that they are, by definition, open to many forms of input and hence may have a wider store of knowledge and more complex schemata (Section 1.24) on which to build continued learning.

More recent research including a major long-term study by Ehrman and Oxford (1995) examines the relationship between a number of individual difference variables and proficiency ratings in speaking and reading for a large group of learners of a wide variety of languages at the U.S. Department of State. Their sample of eight hundred and fifty five learners completed the MBTI and were allocated end of training proficiency ratings in speaking and reading as well as faculty ratings for each student on their overall effectiveness as learners. The findings indicate low but significant correlations between a learner's position on the thinking/feeling continuum and speaking. The closer the student's position to thinking, the higher the level of speaking proficiency. Of particular significance in this study, however, is the sensing-intuition continuum. Intuitives achieved the highest scores in the overall teacher rating as a "good student". Extroversion/introversion and judging/perceiving, however, both failed to show any correlation with any measurements of language proficiency.

A further study conducted by Carrell, Prince and Astika (1996) also concludes that few simple, direct relationships exist between learners' personality types and their language

performance. This study was carried out on seventy six students of E.F.L. in Indonesia. Learning styles were measured using the Myers-Briggs Type Indicator and language proficiency using monthly tests of reading comprehension, vocabulary, grammar and written production. The results do indicate, however, that performance on the grammar test correlates positively with perceiving and negatively with judging. In other words, the stronger a student's preference for perceiving, the better their performance on the grammar tests and the stronger their preference for judging, the worse their performance on the grammar tests. There is also a significant, positive correlation between performance on the vocabulary acquisition test and introversion and correspondingly a negative correlation between vocabulary acquisition and extroversion. Finally, in terms of the overall end-of-course composite grade, introverts significantly outperform extroverts. Similarly, a study conducted by Kiany (1997) concludes that extroversion is not associated with increases in English proficiency among forty Iranian postgraduate students living in the United Kingdom.

Thus, it appears that introvert, intuitive, perceiving, reflective students may in some cases have an advantage in language learning, at least as it is currently assessed. These findings, however, even where they are not contradictory, remain both simplistic and tentative. A number of limitations must be borne in mind with regard to the above studies. In particular, those conducted by Ehrman and Oxford in 1990 and 1995 used distinctive foreign affairs populations. These are highly motivated, homogeneous samples who are taught intensively in small groups. Furthermore, Kiany (1997:133) stresses that his subjects learned English only through formal instruction in a grammar-translation based system and had neither exposure to natural English outside the classroom nor the opportunity to listen to their teachers speaking English in the classroom. He suggests that the results might have been different, at least with regard to the more communicative aspects of English proficiency, had these students exposure to communicative English outside and/or inside the English classes. Finally, all of the studies reviewed above are of an exploratory nature and correlations, where present, tend to be weak. Clearly, though, the relationship between preferred style and learning outcomes merits further investigation.

A second area in need of investigation concerns the degree to which a student's learning style is environmentally and/or genetically influenced. Research conducted to date has, however, succeeded in showing, that no-one is entirely introverted or entirely extroverted, entirely thinking or entirely feeling and that individuals who have tapped their capabilities fully, or engaged in certain forms of training, particularly strategy training (Section 5.26), are able to access the less preferred pole of a given dimension as well as the preferred side with which they are naturally more comfortable (*Oxford, 1990a:45; Oxford and Lavine, 1992:39*). Indeed, findings suggest that effective learning depends on an ability to mobilise approaches associated with both the native learning style preferences and less preferred styles (*Ehrman and Oxford, 1990:323*) and that the strongest learners contrast with the weakest learners of the same style in that they find it easier to access approaches characteristic of the opposing style.

Research has further confirmed that style and strategies are intimately linked and that style, along with such variables as gender, attitude, motivation, the language studied, prior language training, awareness, age, career orientation and teaching methods (see also Section 2.24), significantly influences a student's choice of language learning strategies (*Gardner and MacIntyre, 1993:215; Oxford and Lavine, 1992:38-39*). For example, Oxford (*1996:36*) states, "It is as though learning styles are the underlying or internal construct, and learning strategies are the more "outward" manifestation of learning styles".

In support of this argument, Ehrman and Oxford (*1989 in Green and Oxford, 1995:266*) found more than a dozen significant relationships between strategy use and language learning styles as predicted by Myers-Briggs personality types. Similarly, Rossi-Le (*1989 in Green and Oxford, 1995:266*) found significant relationships between perceptual learning style (visual, auditory, tactile and kinaesthetic) and strategy use for seven out of ten strategy categories. Indeed, each of the style dimensions is thought to have a set of associated language learning strategies (*Oxford, 1990a:35*).

However, the majority of researchers are of the opinion that there has been to date "...an inadequate linking of strategies and styles in the language learning field" (*Cohen,*

LANGUAGE LEARNING STYLES AND STRATEGIES

1998:15). Furthermore, research in the field of language learning strategies has, among other things, been somewhat clouded by controversy regarding the definition of a language learning strategy. The following section begins by addressing this issue.

2.2 Language Learning Strategies

2.21 Defining Language Learning Strategies

A number of unresolved issues have made it difficult for researchers in this field to reach a consensus as to the exact definition of a language learning strategy. Questions remaining relate firstly to whether students are aware of their learning strategies and use them deliberately and consciously, and secondly to whether the definition of a learning strategy should also incorporate production and communication strategies.

In terms of awareness, a number of researchers are of the opinion that a learner must be conscious of the action they are taking for this action to be termed a "strategy". For example, Chamot (1990) defines a learning strategy as "...the purposeful actions and thoughts that we engage in when we want to understand, store and remember new information and skills". Similarly, Dörnyei and Scott (1997:183) define it as "...a *conscious* technique used to achieve a goal...", while Cohen (1998:4) prefers "...those processes which are consciously selected by learners and which may result in action taken to enhance the learning or use of a second or foreign language through the storage, retention, recall and application of information about that language".

However, a number of researchers have difficulty with this approach and base their arguments on the confusion and difficulty associated with determining where consciousness ends and unconsciousness begins. For example, Faerch and Kasper (1983:35) argue that "consciousness is perhaps more a matter of degree than either-or". This argument reflects the hierarchical organisation of plans and intentions, for example to communicate a particular point, and the fact that in most cases a learner consciously selects only certain elements in a plan. In addition, as Gass and Selinker (1994), point out, a central feature of language use is a tendency to automatise high-frequency elements; therefore the small set of strategies people use in the numerous problem situations they encounter can become routinised and are then no longer or at least less "conscious". Similarly, in Wieman and Daly's (1994:ix) words, some strategies are "overlearned and seem to drop from consciousness". That is, what was originally an

intentional strategy may become in certain situations and/or with certain individuals a highly automatised or fossilised, hence not fully conscious, device. Finally, Kasper and Kellerman (1997:7) discuss the possibility of strategies being "potentially conscious". This term draws attention to the possibility that a speaker or hearer may not always be aware of using a particular strategy at the time of its use but could become conscious of it at a later stage. Even Cohen (1998:11) modifies his definition of a language learning strategy somewhat in the distinction he draws between strategies that are "within the focal attention of the learners" and those that are "within their peripheral attention". Cohen continues that learners can identify strategies that are within their peripheral attention if asked about what they have just done or thought. In other words, while learners might not volunteer information on these strategies, it is possible to probe them and obtain information concerning such strategies

A series of definitions for the term "language learning strategy" are, therefore, used by a number of researchers in this field which succeed in overcoming the need to explicitly define a strategy as conscious or unconscious. These include "...strategies which contribute to the development of the language system which the learner constructs and affect learning directly" (Rubin, 1987), "...operations employed by the learner to aid the acquisition, storage, retrieval and use of information" (Oxford, 1990a), "the specific behaviours or actions, often conscious, used by students to improve or enhance their learning process" (Oxford, 1992:440), the specific behaviours or techniques learners use to improve any aspect of their language development (Ehrman and Oxford, 1995:69), "attempts to develop linguistic and sociolinguistic competence in the target language" (Ellis, R.,1994a:531) and finally, "conscious or unconscious mental or behavioural activities, related directly or indirectly to specific stages in the overall process of second language acquisition..." (Purpura, 1997:293). Cohen (1998:11), however, disagrees and argues that approaches taken by the learner of which they are completely unaware, i.e. those which are not even "within their peripheral attention", are not strategies but "processes". These are, however, in any case of less interest to the researcher as, unless they can be observed, they cannot, at least given the current state of research into language learning strategies, be tapped.

Several researchers have attempted to further expand these definitions to include production and communication strategies, where a production strategy consists of an attempt to use one's linguistic system more efficiently and a communication strategy consists of attempts to deal with problems in the communication process caused by a mismatch between a learners' linguistic resources and their communicative intentions (*Dörnyei and Scott, 1997:174*) as well as more general attempts to communicate meaning in a conversational exchange (*Kasper and Kellerman, 1997:2*)¹.

According to Corder (1981) communication strategies include message adjustment and resource expansion strategies. Other researchers (*Faerch and Kasper, 1983 and Ellis, R., 1985*) have used different terms for these two types, that is reduction or avoidance strategies for the first and achievement strategies for the second. Message adjustment strategies involve tailoring the message to one's resources. These strategies often involve a slight alteration or reduction of the message with the learner saying what they can and not necessarily what they would like to. Some researchers (*including Dörnyei and Thurrell, 1991:18*) view this approach as a form of risk avoidance on the part of the learner. With resource expansion or achievement strategies, on the other hand, a learner risks failure and attempts to remain in the conversation, conveying their message by compensating in some way for their deficiencies. Such methods include paraphrasing or circumlocution, approximation and borrowed or invented words. Finally, Dörnyei and Scott (1997:179) go a step further and define communication strategies in general as "...every potentially intentional attempt to cope with any language related problem of which the speaker is aware during the course of communication".

In conclusion, the difficulties associated with determining where consciousness begins and ends and the possibility of the same learning strategy being both controlled and automatic at different stages in the learning process provide powerful arguments in favour of accepting that learning strategies can be both conscious and unconscious. The focus in language learning strategy research will, nevertheless, for methodological reasons be on those strategies that are at least within the "peripheral attention" of

¹ Similarly, Cohen (1998:5) speaks of second language learner strategies as incorporating language learning and language use strategies. In this context, however, language use strategies incorporate retrieval, rehearsal, cover and communication strategies.

learners. Furthermore, if we remain consistent with regard to our definition of speaking in the previous chapter as being a process from conceptualisation to articulation and beyond, then it would logically follow that "learning to speak" incorporates production and communication strategies. The argument in favour of including production and communication strategies in our definition is reinforced by the fact that communication/production or "output" can result in learning (Chapter One). Therefore, since a strategy may serve learning, production and communication simultaneously and it is sometimes difficult to determine if a strategy is motivated by a desire to learn or a desire to communicate, the division between language learning strategies, communication and production strategies is blurred and its maintenance fails to serve any useful purpose in this research.

These lines of argument lead to the following comprehensive definitions of language learning strategies as being "all attempts to develop and use linguistic and sociolinguistic competence in the target language" (*see for example discussion in Ellis, R., 1994a:531*) and "conscious or unconscious mental or behavioural activities, related directly or indirectly to specific stages in the overall process of [second] language acquisition, [second] language use or [second] language test performance" (*Purpura, 1997:293*), both of which appear particularly suitable for this research, indeed for research in this field in general.

2.22 Classifying Language Learning Strategies

Many kinds of language learning strategies exist, possibly even hundreds depending on how narrowly they are defined (see Section 2.21). As yet, there is no consensus as to the specific categories of strategies that exist, a fact that makes comparison across studies difficult. However, several investigations have succeeded in producing different inventories of learning strategies which are broadly in line with the definition of a language learning strategy with which we concluded the previous section. These lists tend to comprise more or less similar categories divided up in somewhat different ways, some being more comprehensive than others.

One of the earlier classifications was proposed by Rubin (1975). This classification perceives learning strategies as falling under three headings: formal practice, functional practice and monitoring. Formal practice includes such activities as listening to and doing pattern drills, listening in order to improve pronunciation, memorising and reciting texts, imitating, retelling stories, reading aloud, and reading in order to learn vocabulary items or grammatical structures. Functional practice involves activities which focus on reading for comprehension, attending lectures, watching films and television programmes and thinking or talking to oneself in the target language. Finally, monitoring refers to efforts made by the learner to pay attention to the use of linguistic forms and to modify language responses. A drawback with this particular classification is, however, its failure to include social and affective strategies, increasingly recognised as fundamental in the process of foreign language acquisition.

Gardner and MacIntyre (1992, *Part II:216-219*) perceive learning strategies as falling under three headings, direct, indirect and institutional. Direct or cognitive strategies represent attempts to apply principles of learning to facilitate the acquisition of vocabulary and grammar. Indirect strategies are affective strategies which attempt to enhance the positive emotional reactions that are associated with language learning and reduce as far as is possible the negative reactions. Institutional strategies are those undertaken by language departments to assist language students. They include decisions to modify the curriculum, the creation of drop-in centres, or "clinics", and so on. A difficulty with this classification arises, however, in the fact that this third category falls outside most definitions of a language learning strategy (Section 2.21).

A useful classification was devised by Chamot and O'Malley (1993). In their framework, three major types of strategy are distinguished. Cognitive strategies refer to steps or operations that require direct analysis, transformation or synthesis of the material to be learned. They include repetition, resourcing, grouping, note taking, substitution, translation, inferencing and elaboration. Metacognitive strategies represent an attempt to regulate language learning by means of planning, monitoring and evaluating. Examples include directed attention, selective attention, planning, self-monitoring, self-evaluation and self-management. Social-Affective strategies concern the ways in which learners

interact with other learners, teachers and native speakers. Examples include co-operation, questioning and request for clarification. This classification has been widely used by researchers to date.

Finally, one of the most comprehensive classifications of learning strategies is that compiled by Rebecca Oxford. Oxford built on earlier classifications with the aim of subsuming within her taxonomy virtually every strategy previously mentioned in the research literature (*Ellis, R., 1994a:539*). This scheme systematically covers listening, speaking, reading and writing. It classifies strategies into six groups depending on whether they are cognitive, metacognitive, social, affective, memory-related or compensatory strategies (*see also Green and Oxford, 1995:265; Nyikos and Oxford, 1993:13*).

The cognitive strategies involve the association of new information with existing information in long-term memory and are concerned with the formation and revision of mental models. These strategies operate specifically on the foreign language material to facilitate its storage and recall from memory. They assist with the learning of vocabulary and grammar rules and with the assembly of foreign language messages. Examples include reasoning, analysing, summarising and practising. Metacognitive strategies involve exercising "executive control" through, for example, planning, arranging, focusing and evaluating one's own learning process, planning for language tasks, consciously searching for practice opportunities, paying attention and monitoring errors.

Social strategies facilitate interaction with others and management of discourse. They include asking questions and co-operating with native speakers. Affective strategies direct feelings, emotions, motivations and attitudes related to learning. They can also assist in anxiety reduction and include self-encouragement and self-reward. Compensation strategies, like communication strategies (Sections 1.23 and 2.21), are used to overcome deficiencies in reception or production of the new language. They include guessing unknown meanings from the context while listening or reading, using synonyms and gestures to convey meaning in speaking and writing. Memory strategies aid in entering information into long-term memory and in retrieving information when

needed for communication. They include grouping, imagery, rhyming and structured revision. This classification, probably because of its comprehensive nature, is becoming the most widely used in this field.

2.23 Strategy Assessment Techniques

A number of different instruments facilitate the assessment of the learning strategies employed by students. The choice of a particular instrument depends on a number of factors including, in particular, the type of information required. Approaches available to the researcher include both observation and self-report. Each of these approaches is now considered in turn.

Many language learning strategies take place mentally. For instance associating/elaborating, using imagery and guessing are "invisible" or "mentalistic" strategies. These cannot be observed by the teacher/researcher. However, overt strategies, which are directly observable, may also take place. These include note-taking, co-operating with peers, asking for clarification or verification, overcoming limitations in speaking through gesture or mime and reference skills such as using a dictionary. It must, however, be borne in mind, in using observation as a strategy assessment technique, that what learners intend by what they are seen doing is not always clear. For example, when writers reread a sentence they have just written their intent in performing this action must be assumed and the assumption may not always be accurate (*see for example, Oxford, 1990b:81*).

In contrast, self-reports can be used to gather data on both mentalistic or unobservable processes (*Oxford and Crookall, 1989*) and overt behaviours. Effective self-reports are dependent, however, on learners' willingness and ability to describe their internal behaviours, both cognitive and affective. This requirement has caused some doubt as to the accuracy of the findings obtained using the self-report approach. Since some strategies operate at lower levels of consciousness or with a higher degree of automaticity than others (Section 2.21) and only conscious (or "potentially conscious") processing is available for self report, those strategies which operate as declarative rather

than as procedural knowledge are more likely to be mentioned. However, recent studies show that, when clear instructions are given and no grades are assigned for strategy use, many or most language learners are capable of remembering their strategies. They also appear to be capable of describing them lucidly in a relatively objective manner (*see for example Chamot and Kupper, 1989 and O'Malley and Chamot, 1993*).

A second reason for which self-report techniques are sometimes viewed as suspect is the possibility of the occurrence of "social desirability response bias" (S.D.R.B.). S.D.R.B. is a tendency to respond in a way the subject thinks the researcher would like, or to show himself or herself as being in some socially acceptable way a "good person". Factors reducing the likelihood of S.D.R.B., although they cannot guarantee its complete absence, include respondents knowing from the start that the findings will not influence their examination grades, anonymity, emphasis on the fact that no strategies are "bad" and effective instrument design (*Ehrman and Oxford, 1995:73; Wenden, 1991:83*).

Many different types of self-report exist. These include introspection, as well as immediate and delayed retrospection. Introspection, or "think-aloud" techniques, involve concurrent conducting of a task and reporting on the learning strategies being employed. Immediate retrospection requires the learner to report on a task that has just been completed, while delayed retrospection consists of a description of strategies used with previously completed tasks. Retrospective approaches may involve interviews, diary studies and/or questionnaires. Introspective and retrospective techniques together with their relative merits and drawbacks, are now reviewed in turn:

When using the think-aloud approach, students introspect orally, generally in their native language, reporting to a listener or into a tape recorder (*Wenden, 1991:81*). Introspective reporting is tied to one learning or communicative task that takes place in a particular setting. As students complete the task, they verbalise their thought processes, so there is no separation in time between the report and the task. Two forms of "think-aloud" techniques exist. According to the first, the student lets his or her thoughts flow verbally in a "stream of consciousness" fashion without trying to control, direct or observe them. In the second, known as "self-observation", the subject consciously

watches and analyses his or her own thoughts. In other words, they act as a "participant observer".

One advantage associated with the use of this approach is that strategies which occur only fleetingly in short-term memory can be identified and reported. Students can also report on sequences of strategies used to solve a specific problem. However, this approach does not provide a general portrait of the individuals' learning strategies in total and is not summative across students for group information (*Oxford and Burry-Stock, 1995:2*). Furthermore, the very act of thinking aloud may slow down the actual processing of information and so reduce the number of strategies the student might otherwise have used. Indeed it is also possible that simultaneous introspection will change the nature of the thought processes so that a modified version of what occurs while thinking is reported. A fourth problem that has been identified with this approach is that it is particularly difficult to implement with certain types of language tasks. For example, informants who are in the midst of oral production may find it exceedingly difficult to explain what they are thinking while at the same time generating the required language. The demands on short-term memory could easily be so complicated as to prevent either the learning strategy description or the language task from being performed effectively (*Chamot and O'Malley, 1993:85-112*). Therefore, this approach is considered to be more suitable for receptive tasks or for writing.

Several forms of retrospective interview exist. With the open-ended interview students are allowed to follow their own train of thought with no limit put on what they say. Teachers or researchers may provide a questionnaire or statement that points to the topic in a general way and students are allowed to respond as they wish. The advantage of this approach lies in the richness of the descriptions obtained of the respondents' use of learning strategies. There is however a difficulty in classifying strategies accurately from open-ended responses as well as in making comparisons across groups. Interviews can of course also be more focused (or "semi-structured"), for example, the interview may focus on a particular skill or on one or several social settings in which students typically use the target language (*Wenden, 1991:81-83*). Finally structured interviews are explicit and specific about the information they seek. As the interview becomes more structured,

the results become easier to classify and group comparisons become easier. On the other hand, however, some of the richness of the detail is lost. Finally, as mentioned above, the retrospective interview can be immediate, focusing on one particular task. It can also be delayed, in which case it is possible to focus on either one specific area or the general language learning process.

A third form of self-report is the language learning diary or journal. This is particularly suitable for delayed retrospection and allows learners to record their thoughts, feelings, achievements and problems, as well as their impressions of teachers, fellow students and native speakers. Diaries and journals provide detailed data on learning strategies for individuals. However, due to their open-ended nature, direct comparisons across student groups are not possible. They also often pose problems for students who find them particularly time consuming and are sometimes unsure of what exactly is required of them in writing a diary.

Finally, the fourth category of self-report is the questionnaire, also primarily used for delayed retrospection. These range from subjective questionnaires to objective surveys. Subjective questionnaires do not provide much organisation in terms of the responses elicited and contain open-ended questions designed to get the respondent to describe his or her language learning strategies freely and openly in writing. In contrast, objective surveys usually ask multiple choice questions which can be objectively scored and analysed. Since more structured surveys use standardised categories for all respondents it is easier to summarise results for a group, objectively diagnose problems of individual students, delimit the responses to information that is relevant and derive precise quantitative measures. However, these might miss richness and spontaneity of less-structured formats (*Oxford, 1990b:197*).

Questionnaires, and in particular structured questionnaires, are generally used to discover something common to a group (*see for example Huang and van Naerssen, 1987:288*). Of all the approaches, they allow for the broadest range of coverage of strategy use because of the structure given to the questions (*Chamot and O'Malley, 1993:88*). Indeed Purpura (*1997:314*) comments, "...many researchers, myself included, support the use of

questionnaires as a valuable elicitation procedure, because they afford such a degree of structure...".

Compared with strategy assessment techniques considered above, questionnaires completed by students have a number of other advantages. They provide a general assessment of each student's typical strategies across a variety of tasks and are almost completely non-threatening when administered using paper and pencil under conditions of confidentiality. However, a disadvantage is that they do not describe in detail the learning strategies a student uses in response to any specific language task (as does the more time consuming think-aloud protocol) (*Oxford and Burry-Stock, 1995:2*) and sometimes need to be complemented with one of the more open-ended approaches, for example the interview.

A number of self-report questionnaires have been developed for learning strategy assessment by researchers like Bialystok (*1981*), Politzer (*1983*), Huang (*1984*), Politzer and McGroarty (*1985*), McGroarty (*1987*), Chamot, O'Malley, Kupper and Impink-Hernandez (*1987*), Padron and Waxman (*1988*) and Bedell (*1993*) (*for a comprehensive review of the research conducted using these questionnaires see Oxford, 1996: 25-27; Oxford and Burry-Stock, 1995:3-4*). However, few of these have published any reliability or validity data. Secondly, they are all based on different learning strategy classifications some of which do not systematically cover all of the areas of interest to the learner.

An exception to this general rule, however, is the "Strategy Inventory for Language Learning" or S.I.L.L. This is one of the most comprehensive and widely used self-report questionnaires in the area of learning strategy assessment. It is based on Oxford's classification of learning strategies, also recognised as one of the most comprehensive in this field. As it is one of the measurement instruments used in the primary section of this dissertation, it is discussed in more detail below.

The S.I.L.L. (*Oxford, 1989-1999*) is a Likert-scaled, self-scoring survey based on the language learning strategy system devised by Rebecca Oxford. It was first designed as

an instrument for assessing the frequency with which language learning strategies were used by students at the Defence Language Institute, Monterey, California. Two revised versions were published (*Oxford, 1990b*), one for foreign language learners whose native language is English (80 items) and the other for learners of English as a second or foreign language (ESL/EFL, 50 items) (*Oxford and Burry-Stock, 1995:4*). The remainder of this section deals with the 80-item version as it is the version most relevant to this research.

It consists of six categories or areas of strategy use (which are not mutually exclusive) to be investigated. These areas partially reflect earlier factor analyses of a longer version of the S.I.L.L. also designed for native English speakers learning foreign languages. Factor analysis involves calculating intercorrelations among the independent variables, in this case the language learning strategies, and then identifying the main underlying factors that explain the greatest amount of co-variation. Such analysis indicated that the S.I.L.L. contained the following categories or factors: memory-related, cognitive, metacognitive, compensatory, affective and social.

The existence of these six strategy groupings in the S.I.L.L. redressed a particular problem, namely that many previous inventories of strategies included a severely limited number of items reflecting affective and social strategies while containing a relative overabundance of cognitive and metacognitive strategies. Although the six categories of the S.I.L.L. are not intended to reflect a perfect theoretical concept of language learning strategies, they are designed to expand the frequently restricted conception of such strategies in the research.² Clearly, Oxford's classification of language learning strategies, discussed in the previous section, was developed in conjunction with her work on the development of the S.I.L.L.

² Indeed, several other researchers have conducted factor analyses of the S.I.L.L. strategies and discovered a different underlying factor structure. For example, Oxford herself conducted factor analysis on the S.I.L.L. (*Green and Oxford, 1995:283*) and determined the existence of nine factors in her particular data set which she described as "mutually supportive" of the six original factors. These include active naturalistic language use, metacognitive strategies with affective support, social and affective strategies, reflective strategies for language analysis and anxiety awareness, sensory memory strategies, cognitive and social strategies for conversation practice and sensory imaging strategies for learning vocabulary. Further factor analyses on the S.I.L.L. are reported in *Oxford and Burry-Stock (1995)*; *Nyikos and Oxford, (1993)*; *Oxford and Crookall, (1989)*; *Huang and Van Naerssen, (1987)* and *Gu and Johnson, (1996)*.

The S.I.L.L. can be used to measure a student's strategy use in three ways: across the entire survey, in terms of the six broad categories listed above, and in terms of particular strategies. The first two of these methods have been more commonly used than the third in the S.I.L.L. research to date (*Green and Oxford, 1995:265*). A typical S.I.L.L. item asks the respondent to indicate, in a multiple choice fashion, the frequency of use ("almost always" to "almost never", on a five-point scale) of a given strategy.

A number of important findings concerning the relationship of strategies to a student's degree of success in learning as well as to other variables have been generated using this instrument. Indeed, it has been a key instrument in more than forty major studies, including twelve dissertations and theses involving approximately 8,000 students in many parts of the world with learners of many different languages, including Chinese, English, French, German, Italian, Japanese, Korean, Russian, Spanish, Thai and Turkish (*Oxford, 1990a*).

Strategy use has been significantly related in S.I.L.L. studies to language performance, gender, whether a language is being studied as a second or foreign language, and differences in students' learning styles. According to Green and Oxford (*1995:265*), "these findings provide evidence of the instrument's validity³, as well as contributing to our understanding of how students use learning strategies" (*see also Oxford, 1995:167*).

Furthermore, the S.I.L.L. has been extensively field-tested and demonstrated to be highly reliable. According to Green and Oxford (*1995:4*), reliability⁴ of the various forms of the SILL, determined using the Cronbach alpha, a measure of internal consistency, is .93-.98 depending whether the students take the S.I.L.L. in their own language or in the foreign language. For example, in a study conducted by Oxford and Nyikos (*1989*), internal consistency reliability was tested using Cronbach's alpha and was found to be .96. (*see also Nyikos and Oxford, 1993:14 for similar findings*).

³ Validity refers to the degree to which an instrument measures what it purports to measure (*Oxford, 1996:30*).

⁴ Reliability refers to the degree of precision or accuracy of scores on an instrument (*Oxford, 1996:29*).

As discussed above, questions about the respondents' truthfulness sometimes arise with self-report instruments like the S.I.L.L.. Some researchers suggest that there is a danger of "Social Desirability Response Bias". However, the evidence suggests that the S.I.L.L. does not lend itself to S.D.R.B. .

For example, in an experiment conducted by Ehrman and Oxford (1995), no evidence of bias appeared in a statistical check using the Marlow-Crown social desirability scale. Similarly, in experiments conducted by Oxford and Nyikos (1989), S.I.L.L. findings taken from several samples were carefully scrutinised to determine whether any bias appeared. The authors (1989:292) report that no such bias was evident. In fact, they comment that "respondents seemed determined to rate their strategies as honestly as possible, even if these strategies were not optimal" (see also Nyikos and Oxford, 1993:14 for similar findings). Assurances that S.I.L.L. scores will not be used for any form of performance evaluation, that no S.I.L.L. strategies are negative strategies, and there are no right or wrong answers appear to contribute to the apparent honesty of the respondents. In addition to the SILL, many researchers have also attempted to complete the picture by administering a background questionnaire, covering, for example, gender, age, years of foreign language study, elective v required course status, learning styles, self-perceptions of proficiency, career orientation and motivation (Oxford and Nyikos, 1989: 292).

Finally, Green and Oxford (1995:267) do comment, however, that, "The S.I.L.L. research to date, while impressive in quantity and quality, has left a number of questions unanswered because of its tendency to focus on broad patterns of strategy use. Few large scale S.I.L.L. studies involving learners across a wide range of proficiency levels have looked at variation in the level of use of individual items, and even fewer have looked for individual item variation in terms of both proficiency level and gender".

In conclusion, it appears that the best approach involves the use of multiple instruments designed to tap different aspects of the language learning process. Depending on the objectives of the particular research study, interviews could, for example, be complemented with learning diaries and/or strategy questionnaires.

2.24 Factors Influencing Choice of Language Learning Strategies

These developments in the definition, classification and measurement of language learning strategies paved the way for research designed to identify the factors which influence a learner's choice of particular strategies as well as the strategies which are effective in promoting different aspects of language learning.

Findings to date indicate that many factors influence the quantity and type of language learning strategies that learners employ as well as the frequency with which they use them. Possible influential variables include gender, career orientation, teaching methods, age, the language studied and prior language training, as well as the personality-related variables, preferred learning style (see also Section 2.1), perceived level of proficiency, attitude towards language learning, level and type of motivation, and language awareness.

Given the dynamic nature of language learning and the complex relationship between learner characteristics, strategies and proficiency, the relationship between these factors may not be one of simple cause and effect with, for example, age having a direct, observable impact on choice of strategies. Instead, a high level of motivation might lead to the use of strategies that increase perceived proficiency leading to a more positive attitude towards language learning, an even higher level of motivation, the use of more strategies and so on. However, for the purpose of clarity, the majority of experiments to date in this area have concentrated on investigating the direct relationship between a particular variable and the learning strategies employed. It must, therefore, be borne in mind that what we are seeing may be a simplified picture. Despite, or perhaps because of this, the findings to date have been somewhat inconclusive. A number of interesting tendencies and commonalities are, nevertheless, beginning to emerge.

For example, the majority of findings with regard to gender differences in choice of language learning strategies, while not conclusive, indicate that females make greater use of strategies than do males and in some cases use more of particular strategy types. For example Politzer (1983 in Oxford, 1990a:39) reports that females use social learning

strategies more frequently than males while Oxford and Nyikos (1989:295) find that females used more strategies than males in three of their five strategy groupings: formal rule related strategies such as using structural knowledge and finding similarities between languages, general study strategies such as organising and using time well and conversational input elicitation strategies including requesting slower speech and asking for pronunciation correction. Males, on the other hand, reported no more frequent strategy use than females on any strategy grouping.

In contrast, Chang (1990), in her study on the language learning strategies employed by Chinese students and their level of oral proficiency, discovered no significant relationship between gender and strategy use. Sy (1994 in Green and Oxford, 1995:266), however, discovered that students of English in the Republic of China displayed significant gender differences in strategy use. Females significantly surpassed males in their use of cognitive, compensation, metacognitive and social strategies. Similarly, Ehrman and Oxford (1995:79) comment that females frequently use more metacognitive (planning, evaluating, organising), affective (motivational and emotional) and social strategies, while Ehrman and Oxford's (1995:373) experimental results indicate that females in this particular study used more compensation strategies than men and more strategies overall.

Finally, in an experiment conducted by Green and Oxford (1995), females showed greater strategy use than males. Indeed, of the fifty strategies tested, fourteen were used significantly more often by women and only one was used significantly more often by men. Green and Oxford conclude that the fourteen strategies used more frequently by women were more global strategies. Three were introspective and to an extent affective strategies, several reflect what the authors (pp.290) describe as "women's conversational behaviour" including rapport-seeking, sociability and elicitation of comment by the speaker and the remainder involved reviewing and evaluation and represented a desire to manage learning in a metacognitive sense. The only strategy used more frequently by men was watching television programmes and videos in English. Green and Oxford (1995:290) stress, however, that male-female differences in language learning strategies do not necessarily mean that people of one gender are necessarily more successful at

language learning than people of the other. In their study, gender and proficiency level appeared unrelated.

Several studies also demonstrate that career orientation, defined as either field of specialisation, for example at a university, or employment position influences choice of language learning strategies. For example, field of specialisation (engineering/science versus social sciences/humanities) appears to have a significant effect on choice of strategies (*see for example Politzer and McGroarty, 1985*). Oxford and Nyikos (1989:295) discovered that humanities, social science and education majors used resourceful, independent strategies and authentic language use strategies significantly more often than did students majoring in other areas. In other words, the humanities, social science and education majors seem to recognise the need to find extracurricular, communicatively oriented practice opportunities in natural settings and to guide their language study in a more autonomous and independent way.

Similarly, Chang (1990:64) concludes that of the participants in her study, those with social science/education majors employed overall language learning strategies more often than did subjects with science majors. More particularly, her results indicate that social science/education majors use cognitive, metacognitive and social strategies more frequently than do those with science majors.

On a related point, it appears that differences also exist between the strategies employed by students taking a language as an elective or option and those taking it as a required element in order to graduate. Oxford and Nyikos (1989:295) discovered that students taking the language as an elective or option use functional practice strategies including initiating foreign language conversations and reading authentic material in the new language, and general study tactics such as being prepared and organising and using time well significantly more often than do those taking it as a graduation requirement. Finally, on the basis of their experimental results, Ehrman and Oxford (1988, 1989) conclude that language instruction specialists use a wider variety of strategies than do adult language learners and native language teachers not specifically trained in instructional methods or linguistics.

Language teaching methods have also been shown to influence language learning strategy use. Oxford (1990a:40) suggests that the longer a student remains in a particular programme, the more likely they are to employ the particular strategies suggested by the programme. For example, Oxford and Nyikos (1989) found that in one university setting, students' language learning strategies mirror analytical, rule-based language instructional methods used for teaching and testing language proficiency at the university. Similarly, co-operative instructional methods have been shown to facilitate co-operative and communicative learner behaviour although in some cases, even where communicative language teaching practices are used in the classroom, learners have been shown to continue to use traditional, analytic language learning strategies, particularly if the predominant instructional style of the institution as a whole is analytic (*see for example McGroarty, 1987*). Furthermore, the environment in which learners find themselves also appears to influence their use of strategies. Studies show that students in a second language environment, where there is far more exposure to the new language and many more communicative demands on the learner, make far greater use of language learning strategies than do those in a foreign language situation (*Green and Oxford, 1995:266*).

Few studies have, however, explored the effect of age on choice of language learning strategies. Those that have indicate that differences in strategies are due less to age differences than to differences in the ways in which individuals gain their language skills (*Oxford, 1990a:39*). Thus, younger learners often use a natural approach and older learners more formal classroom techniques. This is particularly true in the context of second as opposed to foreign language acquisition. Ehrman and Oxford (1995:67) also suggest that younger learners are more likely to gain fluency and native-like pronunciation, while older learners have an advantage in understanding the grammatical system.

Furthermore, according to Oxford (1990a:37) the nature of the particular language studied influences choice of language learning strategies. In the course of a study conducted by Chamot, O'Malley, Kupper and Impink-Hernandez (1987), students of Russian reported greater strategy use than did students of Spanish. Likewise Politzer

(1983), in examining the learning strategies of students of French, Spanish and German discovered that students of Spanish engaged in fewer strategies than did students of the other languages. However, it is likely that the language being studied interacts with a number of other variables. It is possible that brighter or more strategy-aware students would take Russian rather than Spanish which is generally perceived to be easier for English speakers. Furthermore, teachers of various languages might use different teaching methods that are likely to influence students' learning strategies. Students may also be learning different languages for different purposes, which may be reflected in their choice of strategies.

Duration is used to refer to both course level and number of years of language study, but does not necessarily reflect proficiency level. It appears that as language students progress in terms of time spent learning the language, they use different strategies. For example, Chamot, O'Malley, Kupper and Impink-Hernandez (1987) found that higher level students use more metacognitive strategies and fewer cognitive strategies than do lower level students. Nyikos (1987 in Oxford, 1990a:38) reports that university students showed developmental trends in strategy use, with decreasing and increasing use of strategies as the semesters progressed.

Another study (Oxford and Nyikos, 1989:295-296) indicates that foreign language students who had studied the new language for a minimum of four or five years used communication-oriented strategies (i.e. functional practice strategies and conversational input elicitation strategies) significantly more often than did less experienced students. Finally, Oxford (1990a:38) comments that while advancement in course level or years of study does not necessarily mean that students use "improved" or more appropriate strategies in every instance, the research does tend to suggest that the more advanced the language learner, the more "task-appropriate" the strategies used.

Looking at the personality-related variables, it appears that learners' preferences for particular learning styles influence their strategic behaviour, i.e. their choice of language learning strategies. Style preferences include, in particular, the following polar extremes: analytic/global, visual/auditory/hands-on (including both kinaesthetic and tactile),

introversion/extroversion, sensing/intuition, thinking/feeling, judging/perceiving and reflection/impulsivity (Section 2.1).

Ehrman and Oxford (1989) conclude that the participants in their study classified as extroverts are more likely to use affective strategies (as defined by Oxford). Introverts appeared more likely to use those strategies which assist in "searching for and communicating meaning". Intuitive learners were also found to use more affective strategies as well as more of those associated with "authentic language use". Association with the "sensing" pole of the sensing/intuition continuum does not, however, show significant correlations with strategy use on any of the six S.I.L.L. categories. Feelers though, use more of the social strategies. Finally, perceivers show a significant preference over judgers when "searching for and communicating meaning" (1989:10).

In a further study by the same authors (Ehrman and Oxford, 1990), extroverts are this time found to use more social strategies. Intuitives and perceivers, however, favour compensatory strategies with the intuitives also making frequent use of affective strategies. Sensing students report a strong liking for the memory-related strategies. They also report frequent use of cognitive and metacognitive strategies but reject compensatory strategies. Furthermore, thinkers use cognitive and metacognitive strategies more frequently with feelers using social strategies more effectively. Judgers were found in this study to favour metacognitive strategies and to reject compensatory strategies. Perceivers, in contrast, use compensatory, cognitive and affective strategies more frequently.

Even the above two studies demonstrate the inconclusive nature of results to date concerning how preferred learning style influences learning strategies (see also Oxford, 1996:36). Given, however, that each learner is a complex composite of all of the above and more learning style approaches, this is not entirely unexpected.

Perceived proficiency in the foreign language has also been shown by a number of researchers to influence strategy use. For example, Oxford and Nyikos (1989) discovered that the higher the self-perceived proficiency of the one thousand two hundred foreign

language students participating in their experiment, the higher their level of strategy use. Chang (1990), in her study, also concludes that Chinese students who perceived themselves to have above average English language proficiency used more language learning strategies than those who perceived themselves to have below average proficiency. Finally, Ehrman and Oxford (1995:377) reach a similar conclusion commenting that "...positive beliefs about oneself as a language learner are reflected in reports of relatively high levels of use of several kinds of strategy...".

Learners' attitudes also appear to be highly influential in choice of language learning strategies. Wenden and Rubin (1987) suggest that where negative attitudes are present, it may be that no amount of training in better learning strategies will have a positive effect. Positive attitudes also appear to be related to language learning motivation. A number of researchers including Gardner and Lambert (1959, 1972) and Ehrman and Oxford (1995) believe motivation to be one of the key determinants of the extent of active personal engagement in the learning process.

In 1994, Oxford and Shearin expanded the theory of language learning motivation to include concepts drawn from general, industrial, educational and social-cognition psychology. Some of their findings include the fact that some learners' language learning motivation could be based on a need for achievement while others might stem from a fear of failure or in some cases even a fear of success in the language classroom. In their opinion, motivation will only be high if expectancy of success is high along with the value students place on the success. If one of these values is low, students' levels of motivation will be negatively affected. It is also important, Oxford and Shearin continue, that if motivation is to remain strong, students must believe that the outcome is at least equal to the input (effort). Furthermore, for optimal motivation, the goals must be clear challenging and reachable and there must be feedback on goal achievement.

Studies conducted to determine the relationship between motivational levels and language learning strategies indicate that highly motivated learners use particular groups of learning strategies significantly more often than do less motivated learners. For example, in a study conducted by Oxford and Nyikos in 1989, the degree of expressed

motivation to learn the language was the most powerful influence on strategy choice. Here, highly motivated learners used four out of five factors significantly more often than did less motivated learners. These factors were formal rule-related practice strategies, general study strategies, functional practice strategies and conversational input elicitation strategies. The only factor which did not display significant differences was that which included the strategies grouped as resourceful, independent strategies. This factor comprised relatively low-usage strategies in this study and included independent manipulation of foreign language material in order to embed it in memory and the independent use of certain metacognitive actions. Furthermore, of the four factors used more frequently by more motivated learners, the most popularly used were formal rule-related practice strategies and general study strategies. Least popular were functional practice (authentic language use) strategies and conversational input elicitation strategies which tended to involve a greater personal investment in the target culture and demanded more extracurricular effort in finding naturalistic practice opportunities. These results are attributed to what appeared to be a predominantly instrumental motivation for language learning, reflected in the predominant goals expressed by the students in the sample, that is to fulfil the language requirement and obtain good grades in a traditional academic environment which stressed analytical rule-learning skills. Developing communicative competence was not the goal of most of these students.

A further study carried out by Oxford and Ehrman (1988) also provides insights into the effects of motivational orientation on learning strategies. In this study, adults learning languages for job-related reasons used more functional communicative practice strategies. In other words, the fact that they were extrinsically as opposed to intrinsically motivated influenced their choice of language learning strategies. Other studies including that of Politzer and McGroarty (1985 in Oxford, 1990:39) have also investigated the importance of instrumental versus integrative motivation in determining strategy use, but with somewhat ambiguous findings.

Another factor influencing strategy use is awareness. This refers to what learners know about their own learning process and strategy use. Some researchers, including Nyikos (1987), suggest that learners are generally unaware of the strategies they employ.

Similarly Nyikos and Oxford (1993:13) argue that, typically, second and foreign language students are not fully aware of their own language learning strategies and are even less aware of the wide range of alternative strategies used by highly successful language learners. Others reject this assumption and argue that even ineffective learners are generally aware of the strategies they use and that students show increasing levels of awareness at higher language levels. Once students are aware of the strategies they employ, they are in a position to add to or reduce them in particular situations. Indeed, as we shall see in the final chapter, one of the first steps in some strategy training models is to first make learners aware of the strategies they are currently using by means, for example, of a strategy questionnaire.

Finally, another element, important in any discussion on the factors influencing a student's choice of language learning strategies, is the extent to which the students in question have been exposed to different forms of strategy training. Given its significance in the context of this study, strategy training is considered in some depth, in the final section (5.26). However, it is clear, even at this stage, that the question of successful strategy training is inextricably linked to the identification of those strategies which enhance language learning either in general or in specific situations. In other words, as important as the question concerning whether strategies can be taught, is the question as to whether learners actually benefit from their use. Research designed to determine which strategies enhance learning outcomes is central to this field and indeed to this particular piece of research. Key findings are discussed in the following section.

2.25 Language Learning Strategies and Learning Outcomes

Researchers investigating possible relationships between strategic behaviour and learning outcomes generally employ one of two closely related approaches. According to the first, the strategies used by more effective language learners are studied using primarily qualitative approaches. The second approach, on the other hand, determines quantitatively whether correlations exist between the strategies and/or combinations of strategies used by more and less successful learners and the proficiency levels they achieve.

2.251 The "Good Language Learner"

Researchers using the first approach have discovered that certain strategies characterise successful language learners. In these "good language learner" studies, effective learners are identified and interviewed and/or asked to complete a questionnaire. The studies focus either on students' overall approaches to language learning or on the strategies they use while performing specific tasks. In some cases, the results are then compared with those for less effective learners. Some of the key findings are as follows.

With regard to their overall approach to language learning, Rubin's (1975) findings indicate that the good language learner is a willing and accurate guesser, has a strong, persevering drive to communicate, is often uninhibited and willing to make mistakes in order to learn or communicate, focuses on form by looking for patterns, takes advantage of all practice opportunities, monitors his or her own speech as well as that of others and pays attention to meaning. Rubin (1981,1987) also identifies strategies contributing to language learning success either directly, for example inductive inferencing, practice, memorisation, or indirectly, for example creating practice opportunities and using production tricks.

Similarly, Naiman, Frohlich and Todesco (1975) name six strategies of good language learners. These are selecting language situations that allow one's preferences to be used, actively being involved in language learning, seeing language as both a rule system and a communicative tool, extending and revising one's understanding of the language, learning to think in the language and addressing the affective demands of language learning.

R. Ellis (1994a:546), in his review of several "good language learner" studies, further identifies five major characteristics of these learners, some of which overlap with those of Rubin. In his opinion, they possess a concern for language form, a concern for communication, an active task approach, an awareness of the learning process, and a capacity to use strategies flexibly in accordance with task requirements. Ellis does emphasise, however, that individual differences exist and that his findings merely represent an attempt to identify an overall pattern.

LANGUAGE LEARNING STYLES AND STRATEGIES

Studies, such as those reviewed by Ellis, include in particular the following empirical, experimental studies: For example, Chamot, Kupper and Impink-Hernandez (1988a,b) conducted an experiment with high-school foreign language students of Spanish and Russian over four school semesters, in which their objective was to determine more specifically the differences in strategic behaviour between more and less effective learners. Interviews and think-alouds were carried out for a variety of foreign language tasks including listening, reading, grammar exercises, cloze tests, role-playing and writing.

Differences between more and less effective learners, as classified by their teachers, were found in the number and range of strategies used and in how the strategies were used. In contrast to ineffective language learners, the authors conclude that effective students apply metacognitive knowledge and a greater range of more appropriate strategies to language tasks by planning their approach to the task and by monitoring their comprehension and production for overall meaningfulness, rather than for literal translation. The effective students also appear to be aware of the value of their prior linguistic and general knowledge and use this knowledge to assist them in completing the tasks.

In a further study, this time carried out by Chamot and Kupper (1989), sixty seven high-school students drawn from first year, third year and a combination fifth/sixth year Spanish classes were classified by their teachers into effective and ineffective learners at each level. These students were interviewed individually and given typical language learning activities to perform such as completing a cloze test, reading a passage, listening to a monologue or dialogue and writing a paragraph about a drawing. Students were asked to think aloud while they worked on the tasks, or to recount their thoughts as they attempted to solve the problem presented. Differences between the effective and ineffective learners appear in the range of strategies used and the way in which the individual strategies were applied.

According to the authors (1989:17), more successful students use strategies "...more often, more appropriately, with greater variety, and in ways that helped them complete

the task successfully". The less effective learners have fewer strategy types in their repertoires, and also frequently use strategies that are inappropriate to the task and thus do not result in its successful completion. Finally, the effective learners are more purposeful in their approach to a task, they monitor both their comprehension and their production for overall meaning rather than individual elements and use their prior general and linguistic knowledge to good effect when working on a task.

A second step in this research involved case studies of eight exceptionally effective Spanish students over a four semester period. Longitudinal data were available for these students for reading, listening and writing. Analysis of the reading data revealed that the students read in Spanish much as they read in English, searching for meaning in context rather than through individual words and deploying strategies such as tracking (translation, summarising, self-evaluation), awareness of comprehension breakdowns (self-monitoring) and the willingness and ability to remedy such breakdowns when they did occur using such techniques as inferencing, elaboration based on background knowledge and deduction.

On listening tasks these students used the comprehension questions in advance to set the scene for themselves and call up what they already knew about the topic (elaboration) in order to predict possible content (inferencing). They then used the question to focus on important content (selective attention) correcting or confirming their predictions as they listened (self-monitoring).

Writing in Spanish also appeared to follow the same pattern as writing in English, that is planning, composing and reviewing. These students showed themselves capable of directing their attention to the task without allowing themselves to become distracted. They also attempted to think and generate ideas in Spanish while they wrote, they remained within their known vocabularies rather than trying to translate words or phrases from English, they substituted alternate words when they could not immediately remember the intended words and they continually generated new ideas rather than being deflected by problems. In summary, the principal strategies used by these students for writing were planning, deduction and self-monitoring.

Green and Oxford (1995) conducted a study in 1992/3 participated in by 374 students of Intermediate English at the University of Puerto Rico, a mixed second/foreign language environment. The students, all of whom had been exposed to similar amounts of instruction in English, were classed as effective and less-effective learners based on their scores in the "English as a Second Language Achievement Test". This is a general proficiency test dealing with grammar and reading comprehension. The students also completed a fifty item version of the S.I.L.L. Data analysis indicated that sixteen strategies were used more frequently by more effective students and one item was used more frequently by the less effective students. The sixteen items used more frequently included, in particular, "read without looking up all new words", "read for pleasure in English", "write notes in English", while the strategy used more frequently by less effective learners was "notice when I'm tense or nervous". These findings could, however, be related to the fact that the proficiency rating contained a large element of reading comprehension. Interestingly, though, almost all of the fourteen strategies used more frequently by more effective learners involve active use of the target language, with a strong emphasis on practice in natural or naturalistic situations.

Furthermore, Green and Oxford also note that nine strategies are used frequently by both effective and ineffective learners and fourteen are used moderately frequently by both groups. In attempting to interpret their results they suggest that perhaps these strategies do not make a difference and that only those used more often by more effective students are important or productive. It appears unlikely, however, that strategies such as thinking about one's progress in learning or skimming a section before reading it in more detail are unimportant. Green and Oxford propose, therefore, that certain strategies, which they term "bedrock" strategies contribute significantly to the learning process of more effective students, although they are not in themselves sufficient to move the less successful students to higher proficiency levels. It is also possible, of course, that the weaker students use these nine strategies ineffectively or at inappropriate times.

As mentioned above, the second group of experiments in this category looks at the strategies employed by effective learners while performing specific tasks. This group includes a study conducted in 1989 by O'Malley, Chamot and Kupper among learners of

English as a second language. The objective, this time, was to determine the different strategies used by effective and less effective learners focusing exclusively on listening comprehension. Think-aloud interviews were conducted with high school students as they were listening to brief, academic presentations in English. Statistical analysis of the strategies used for the listening tasks revealed significant differences in strategy use between effective and ineffective learners in three major areas.

For example, effective listeners use comprehension monitoring, association of new information to prior knowledge, and making inferences about unknown words or information significantly more often than ineffective listeners. A qualitative analysis of the think-aloud interviews reveals differences between the effective and ineffective learners in their approaches to different stages of the listening task. At the initial stage, ineffective learners are less able than effective learners to focus their attention on the input. Later, ineffective students parse meaning on a word by word basis, and did not attempt to infer meanings of unfamiliar items. Finally, ineffective learners do not use elaboration, or association of new information with prior knowledge, to assist comprehension or recall of the passage. The authors conclude that the failure of ineffective learners to use appropriate strategies for different phases of listening appears to be related to their lack of understanding of the task demands and of appropriate strategies to use for the task (*see also Vandergrift, 1997*).

Finally, Corbeil (1990) notes differences in strategy use between two groups of seven successful and seven unsuccessful learners with regard to how they dealt with error correction. She concludes that the better students use more elaborate strategies to understand error correction and integrate it into existing knowledge than do the poorer ones. In her opinion, the more successful students process the information more fully at a deeper level, expend more effort, become more engaged in their material and treat the correction more positively than do the unsuccessful students. Unsuccessful students are only willing to process a very specific correction and often ignore the correction altogether.

2.252 Correlational Studies

The correlational studies⁵, on the other hand, seek to determine whether frequency of strategy use correlates with proficiency in a foreign language. Two major types of correlational study exist. The first attempts to identify correlations between the total number of strategies employed and overall proficiency level as determined by a series of tests involving a variety of skills. The second concentrates on investigating the relationship between the individual and/or groups of learning strategies employed and either overall language proficiency or one specific aspect of proficiency, such as oral proficiency. The principal studies in each category are now reviewed in turn.

With regard to the first, a number of researchers continue to argue that "...successful language learners generally use more learning strategies..." (*Oxford, 1990a:37*). For example, Oxford and Crookall (*1989:407*) reporting on a study conducted by Chamot in 1989 comment that "The major apparent difference between successful and less able students was that the former used a greater number of language learning strategies more often than did the latter". Park (*1997*) supports this view. In his study, he concludes that the number of language learning strategies employed correlated positively with the level of proficiency achieved by Korean students of English.

However, this claim has not been supported by the majority of studies conducted to date. For example, Vann and Abraham (*1989*) discovered that many unsuccessful learners use a vast number of strategies but in an unorchestrated, random way. Chang (*1990:i*), in a study conducted to investigate the relationship between the learning strategies employed by fifty Chinese students of English and their level of oral proficiency, concludes that no relationship existed between the total number of learning strategies employed and the level of proficiency obtained. Indeed, Pratts (*1995*) discovered that the more proficient participants in her study reported using less cognitive and metacognitive strategies than did the less proficient learners. These, and similar studies, have led to the tentative conclusion that the number of strategies may be less important than the particular combination or the learner's orchestration of the strategies employed.

⁵ While the "good language learner" studies may also incorporate some correlational analyses, the methodologies tend to be more qualitative.

In terms of the second grouping, a series of experiments have been conducted many of whose findings have been somewhat inconclusive. For example, Bialystok (1979) attempted to determine whether a relationship existed between functional practice, inferencing, formal practice, monitoring and proficiency in the foreign language. She used a sample of one hundred and fifty seven high school students of French in grades ten and twelve in Toronto. The proficiency level of these students was measured using a combination of written/grammar, aural/oral and reading/written tasks and their learning strategies using a questionnaire. In the questionnaire, students were required to record the frequency with which they employed a particular strategy in both written and oral work.

Regression analysis revealed that functional practice consistently accounted for significant portions of the variance in proficiency, monitoring showed a strong positive trend, reaching significance, however, only in Grade Twelve, inferencing had no effect on proficiency at any stage and formal practice showed a small positive relationship to achievement in Grade Ten but a significantly negative one in Grade Twelve. Analysis of the relationship between strategy modality and the measures of achievement revealed some evidence of associations, albeit weak, between performance on the aural/oral task and use of oral strategies, and reading/written proficiency and the use of written strategies.

A study conducted by Politzer and McGroarty (1985) involving thirty seven students enrolled in an eight week intensive course in English as a second language, produced even more inconclusive results. The study used a questionnaire designed by the authors to elicit information about learning strategies used both inside and outside the classroom and correlated these with learning gains on three tests (a comprehension test, a discrete item test of linguistic competence and a test of communicative ability). These tests were administered at the beginning and end of the course.

Social interaction was found to be related to increases in oral communicative ability but no other significant correlations were found (1985:114). However, some groups of strategies were found to correlate with increases in one or more of the tests. For

example, active enquiry concerning the language such as "asking teacher about expression" and "asking teacher for confirmation of correctness" correlated significantly with increases in listening comprehension and communicative ability, while reported behaviours involving attention to form such as "keeping track of new vocabulary" and trying to use new words" were linked to gains in linguistic competence.

Politzer and McGroarty conclude from this that a given strategy could not be considered intrinsically good in all situations and for all purposes, as learning strategies useful for increasing linguistic competence might be different from those suitable for increasing communicative competence.

Oxford and Ehrman (1995) conducted a further study looking for correlations between strategies and proficiency with five hundred and twenty highly educated adults participating in intensive courses in a variety of languages at the Foreign Service Institute of the U.S. Department of State. The participants completed a Learning and Study Strategies Inventory and the S.I.L.L. as well as receiving proficiency ratings between 0 and 5 for reading and speaking from their instructors. The results revealed only one significant correlation. This indicated a low but significant positive association between the use of cognitive strategies and the speaking (but not reading) proficiency score. Oxford and Ehrman (1995:373) suggest that a possible reason for the lack of significant correlations in this study might be the restricted range of proficiency scores caused by the homogenous nature of the sample.

Purpura (1997) conducted a study designed to analyse the relationship between the cognitive and metacognitive strategies employed by students while taking a language test and their performance on that test. This study differs, however, from the others reviewed in that it looks for associations between the strategies employed while taking the test as opposed to those employed in activities associated with learning the language. However, as Purpura comments (1997:293), strategy use in test performance cannot be dissociated from strategy use in language use or language acquisition. Furthermore, given our broad definition of a language learning strategy (Section 2.21), the findings continue to be of relevance here.

Participants in this study were one thousand three hundred and eighty two test takers from seventeen centres in Spain, Turkey and the Czech Republic. They had a median age of sixteen and were studying English at high school, university or a Bi-National Centre which is a non-profit organisation outside the USA. whose purpose is to promote cross-cultural understanding between the USA. and the host country. Purpura limited the participants to those with proficiency levels of high-beginning or above. The participants completed two questionnaires measuring their use of cognitive and metacognitive strategies respectively, and took a standardised language test. The cognitive strategies questionnaire assessed ten strategies representing comprehension (clarifying/verifying and analysing inductively), memory (associating, repeating/ rehearsing, summarising and transferring from the first language) and retrieval (analysing inductively, inferencing, linking with prior knowledge, applying rules and practising naturalistically). The metacognitive questionnaire tested for four variables, assessing the situation, monitoring, self-evaluating and self-testing and two underlying process type variables, on-line and post assessment processes.

The language test, the Certificate of English FCE Anchor Test, consists of two parts. The first section, the reading comprehension test, assesses the student's general ability to understand written English. It consists of a grammar and vocabulary test which measure use of grammatical rules and constraints, semantic sets and collocations, and phrasal verbs, and a "passage comprehension" test which measures a student's ability to read a passage in English for details, synonyms and inferences. The second section, entitled "Use of English", tests use of English at word and sentence levels. It contains a word formation test in which students transform the root of a word into a related word based on its use in a sample sentence, a cloze test which assesses structural and lexical appropriacy and a sentence formation test which requires candidates to write a sentence similar in meaning to the one provided.

Purpura used sophisticated statistical procedures including "structural equation modelling" to investigate the relationship between the strategies employed and test performance. Structural equation modelling was particularly useful in this experiment because it provides a means of representing the inter-relationships between observed

variables and constructs as well as among constructs in an attempt to explain the causal links (see Purpura, 1997:292).

The findings indicate that while no direct correlation exists between the use of the metacognitive strategies and second language test performance, metacognitive processing does have an indirect affect in that it encourages the use of cognitive strategies, one of which, retrieval, had a positive impact on second language test performance in this particular study. The use of memory strategies, however, correlated negatively with performance on the test, that is the more students used memory strategies the worse they performed and vice versa. Thus, Purpura concludes that "good" test taking strategies can be defined as the ability to retrieve information from long term memory without spending time trying to "learn" or "remember" because using both types of strategies appears to detrimentally effect recall. This finding is unlikely to apply to proficiency development.

Finally, an experiment was conducted by Park (1997) in Korea. Here, language learning strategies, as measured by the S.I.L.L., were correlated with the levels of proficiency achieved by three hundred and thirty two Korean students of English. Proficiency level in English was measured using the "Test of English as a Foreign Language" which consists of three sections: listening comprehension, structure and written expression, and vocabulary and reading comprehension. The results indicate that a positive significant correlation exists with the total number of strategies employed in each of the S.I.L.L. categories, i.e. cognitive, metacognitive, social, affective, memory-related and compensatory strategies, and proficiency. The association is particularly strong between levels of proficiency and the total number of social and cognitive strategies employed.

As mentioned above, a series of studies also looks at attempts to correlate strategy use with particular aspects of proficiency. These studies include those designed solely to investigate the relationship between learning strategies and oral proficiency. There has been to date, however, a lack of research in this particular area of language learning strategies.

An important exception is an experiment conducted by Huang and van Naerssen (1987). This study hypothesises that successful Chinese E.F.L. learners (where success is defined in terms of levels of oral communicative ability) employ strategies which less successful learners do not employ or employ only rarely. Sixty graduating English majors in the English Department of the Guangzhou Foreign Language Institute in China were given an oral test and a learning strategies questionnaire. The oral test emphasised communicative ability and included such tasks as describing one's home town and giving newly arrived teachers some information about the Foreign Language Institute. The learning strategies in the questionnaire were derived from the Rubin-Stern inventories described above (Section 2.22) and could therefore be analysed under the headings formal practice, functional practice and monitoring. Interviews were conducted with the ten highest and nine lowest achievers on the oral communication test. The interviews explored the following topics: preference for written or oral modality, motivation for studying English, conscious versus unconscious learning and dependence and independence in foreign language learning.

Analysis of the results reveals that students who are more successful in oral communication report employing functional practice strategies more frequently than the less successful ones. In particular, the more effective communicators use "thinking or talking to self in English", "speaking with other students, teachers and native speakers"⁶ and "participation in group oral communicative activities" significantly more frequently than do less effective communicators.

Indeed, a multiple regression analysis confirms "thinking in English" to be the most significant predictor of oral proficiency followed by "speaking with other students, teachers and native speakers". In contrast the technique groupings related to formal practice, i.e. memorisation, drilling, imitating and story retelling did not appear to have significant positive effects on oral performance. Monitoring, likewise, showed no significant effect.

⁶ See also Politzer and McGroarty (1985) on correlations between active enquiry concerning language use and gains in communicative ability.

Finally, the strategies employed were grouped in terms of listening, speaking and reading related strategies in order to see how self-reported use of techniques in these three areas correlates with oral proficiency. The results show a significant correlation between both speaking and reading, and oral proficiency, with reading practice standing out as the strongest and most significant predictor of oral proficiency.

A second study investigating the relationship between strategy use and oral proficiency was conducted by Shiang-Jiun Chang at the University of Georgia in 1990. Fifty Chinese students participated in this study. They were aged between twenty four and forty four, came from Taiwan and Mainland China and were enrolled at the University of Georgia. Half of the participants were students of science while the other half were in the humanities/social science/education field. The "Ilyin Oral Interview" was administered to determine the subject's level of proficiency, as well as a language learning strategy questionnaire (adapted from the S.I.L.L.) and one-to-one interview. The Ilyin test is an integrative test designed to assess an individual's ability to understand and speak intelligibly in English in a picture controlled situation. As with Huang and Van Naerssen's study, it focuses on oral communicative abilities.

This study does not, however, determine the relationships between individual strategies and oral proficiency but concentrates instead on the total number of strategies employed and the total number employed in each of the S.I.L.L. categories and investigates the possibility of associations between these totals and the levels of oral proficiency obtained. The results reveal no significant association between level of proficiency and the total number of strategies employed. However, a positive correlation between the number of social strategies employed and level of oral proficiency obtained does appear. Finally, a third study in this area was conducted by Pratts (1995) in New York. The study sought to determine the relationship between the cognitive and metacognitive language learning strategies (as defined by Oxford (1990b)) used by successful science and mathematics students in Puerto Rico⁷ and their level of oral proficiency in English. The participants were twenty twelfth grade high-school students. Their learning strategies were identified using an in-depth interview based on a student's interview

⁷ In Puerto Rico English is not the major language of daily communication but is nevertheless highly available as input.

guide, and their level of oral proficiency using the Bachman-Palmer Oral Interview Test of Communicative Proficiency (*Bachman and Palmer, 1983 in Pratts, 1995:4*).

The Bachman-Palmer test is composed of three components: grammatical, pragmatic or discourse, and sociolinguistic competence. Grammatical competence includes the range and accuracy of morphology and syntax, pragmatic competence refers to the ability to express and comprehend messages and includes the sub-traits of vocabulary, cohesion and organisation. Sociolinguistic competence includes the distinguishing of registers, control of non-literal, figurative language and relevant cultural allusions. For grammatical competence, for example, the main scale rating is from one to six and is divided into two subscales: range and accuracy with range (0) defined as "no systematic evidence of morphologic and syntactic structures" and range (5-6) as "complete range of morphologic and syntactic structures. The main scales for sociolinguistic competence on the other hand are from zero to four with use of cultural references for example defined as (1) "no evidence of ability to use cultural references" to (4) "full control of appropriate cultural references". Due to the complexity of this scale two interviewers are required, the interview is taped and a third rater is used to settle differences of opinion.

The results demonstrate that students achieving higher levels of proficiency use strategies classified under "practising", including "repeating", and those classified under "receiving and sending messages" most frequently. Those achieving lower grades in the Bachman-Palmer interview reported using strategies classified under "analysing and reasoning" such as analysing expressions, translating and transferring most frequently. In terms of metacognitive strategies, the more effective language learners use the category "Evaluating your learning" and in particular "self-evaluating" followed by "self-monitoring" most frequently. Similar results were obtained for the less proficient learners.

The emphasis in this study, however, is placed on the total number of cognitive and metacognitive strategies employed by weaker and stronger learners. Surprisingly, the results indicate that the weaker learners used more cognitive and metacognitive strategies than did the more proficient students (one hundred and forty as compared to

one hundred and fifteen cognitive strategies and one hundred and thirty eight to one hundred and fifteen metacognitive strategies). Pratts suggests that this finding may be due to the specific type of learner involved, i.e. one highly successful in mathematics and science who may be aware of their limitations in the second language and may be motivated to use a variety of strategies to make up for this limitation.

2.253 Evaluation and the Proficiency Question

In conclusion, these studies provide important insights into the kinds of behaviours associated with successful and less successful language learning. For example, in looking at the strategies which characterise good language learning, either in general or with regard to specific tasks, the vast majority of these studies agree that the "good language learner" is an "all-rounder".

According to Rubin, these learners focus not only on form but also pay attention to meaning. Naiman, Frohlich and Todesco describe them as viewing language as both a rule system and a communicative tool. Finally, according to R. Ellis, they display a concern for form and communication.

In addition, several studies indicate that the more effective learner uses metacognitive knowledge to monitor the learning process. In other words, the more successful learner uses such strategies as self-monitoring and self-evaluation on a regular basis.

Furthermore, they appear to use a wider range of more effective or more "appropriate" strategies in a more elaborate manner than do less effective learners. Here "appropriate" is generally used to mean strategies that are more effective in assisting in the completion of the particular task in question.

Although the results obtained to date by the correlational studies are less conclusive, they do support some of the above findings. For example, while the question as to whether more proficient students use more or less strategies remains a controversial one, these studies also stress the importance of metacognitive strategies, particularly

self-monitoring. In some cases (*for example Purpura, 1997*), these strategies were seen to encourage the use of cognitive strategies and indirectly enhance learning outcomes⁸. In particular, strategies which involve active involvement in the learning process, such as cognitive and social strategies, are identified as being associated with higher levels of oral proficiency.

However, attempts to generalise with regard to specific strategies must remain tentative. This is due to a number of factors. Firstly, the results obtained to date are somewhat inconclusive and, in some cases, contradictory. Secondly, different strategy definitions, classifications and measurement techniques are employed by the researchers in this field. Thirdly, researchers are investigating several languages which have been taught using different approaches in a variety of cultural settings. Furthermore, of particular importance in the context of this study is the fact that there is a considerable lack of research in this area on Irish students at third-level learning German. Similarly, there is a lack of such studies in Germany where research has focused on measuring strategic behaviour and the factors which impact on strategic behaviour at primary level (*Finkbeiner, 1997; Nold, Haudeck and Schnaitman, 1998*).

A further barrier in attempts to draw more general conclusions from the findings of the individual studies is the fact that some of the learners in the studies reviewed are foreign language learners while others are second language learners. Furthermore, the participants in the various studies will naturally display different learning styles, characteristics and proficiency levels.

Finally, different interpretations of what it means to be proficient have created difficulties in the comparison of research findings. This point is illustrated using a brief outline of the evolution of views on what is meant by such terms as "skills" "competence" and

⁸ It should be noted that a correlation between greater strategy use and higher levels of proficiency is not in itself evidence of causality. In other words, higher levels of proficiency may be the cause rather than the result of greater strategy use. It is also possible that the higher levels of strategy use and the higher levels of proficiency may be the result of some unidentified third factor. However, it is more likely that the identification of a correlational relationship between learning strategies and proficiency indicates that a relationship exists between these variables but that it is a bi-directional one. In other words, it is likely that increased strategy use increases proficiency which in turn increases strategy use (see also Sections 2.24 and 5.12).

"proficiency" followed by a review of how these terms have been operationalised by researchers.

Early attempts at creating systematic frameworks for describing the measurement of language ability were incorporated into the skills and components models such as those proposed in 1961 by Lado and Carroll. These models view language ability as a set of finite components, grammar, vocabulary, pronunciation and spelling, that are realised as four skills, listening, speaking, reading and writing. They argue that if these components are assessed, then a student's level is being measured.

Chomsky's 1965 model of language, on the other hand, distinguishes between "competence", the speaker-hearer's knowledge of his language; and "performance", the actual use of language in concrete situations. This linguistic model is primarily preoccupied with the language of the ideal speaker-listener in a completely homogeneous speech community, unaffected by memory limitations, distractions, shifts of attention and interest, and errors in applying knowledge of the language in actual performance. Therefore, it also limits language proficiency and its assessment primarily to the area of competence as defined by Chomsky.

At this stage, however, recognition was growing that, for example, the Audio-Lingual and Grammar-Translation methods were failing to foster communication skills. This led to the development of the communicative approach in Britain in the 1970s. This approach, which has since spread to many parts of the world, focuses on developing competence of a different kind, i.e. the ability to understand and communicate meaning. A closely related approach became and remains increasingly popular in, for example, the United States. It is known as "proficiency-oriented instruction" (*Oxford, Lavine and Crookall, 1989:30-33*). The proficiency approach emphasises the learner reaching a measurable level of proficiency (ability to use the language communicatively) in listening, speaking, reading and writing. Regardless of whether the term "communicative competence" or "language proficiency" is used, both approaches stress the importance of active, communicative involvement in language learning.

Taylor (1988:166) uses Chomsky's definition of competence but proposes the use of the term "communicative proficiency" defining "proficiency" as "the ability to make use of competence", and "performance" as "what is done when proficiency is put to use". Thus proficiency is seen as something between competence and performance.

Similarly, other behavioural models, such as that proposed by Hymes (1972)⁹ have been consistently taken to include combinations of knowledge and skills. Indeed, Hymes (1972:282) understands competence to be dependent on two things: (tacit) knowledge and (ability to) use. Similarly, he insists that there are rules of use without which the rules of grammar would be useless (*for further discussion see Bachman and Savignon, 1986:380-382; North, 1997: 93-100*). Thus, this view implies the centrality of socio-cultural competence. Continuing in this tradition, Halliday's (1976) and Austin's (1962) notions of language functions, on the other hand, reflect their belief that language has evolved in the service of social functions. They place greater emphasis on the social and essentially interactive nature of language.

Similarly, a model proposed by Canale and Swain (1980) includes the components grammatical, sociolinguistic and strategic competence. Sociolinguistic competence comprises socio-cultural rules and rules of discourse while strategic competence is an aggregate of communication strategies, serving to compensate for breakdowns in communication, due to performance variables or insufficient competence, where competence includes both grammatical and socio-linguistic competence.

Some ten years later Bachman (1990) reorganised and elaborated upon this proposal. In his model, the two main components of the linguistic competence required for communicative language use are organisational competence, including grammatical and discourse competence; and pragmatic competence, which subsumes illocutionary and socio-linguistic competence. According to Bachman's model, strategic competence operates on all of these components but in a wider sense than proposed by Canale and Swain (*see also Faerch and Kasper, 1983*). While the ability to solve receptive and productive problems due to lack of knowledge or accessibility remains an aspect of

⁹ See also Bygate (1989), Section 1.1.

strategic competence, it is described here as the ability to use linguistic knowledge effectively. Indeed, working with Palmer, Bachman later broadened his view of strategic competence (*Bachman and Palmer, 1996*) to include, in particular, mastery of metacognitive components or strategies, which are described as higher order executive processes. According to Bachman and Palmer, these then provide a cognitive management function in language use.

Thus although advances have been made and a degree of consensus seems to be emerging, the process of developing a model of communicative language use remains incomplete. Furthermore, success in confirming the supposed structure and components posited by such models by operationalising them in tests has been limited (*North, 1997:95*).

Several tests have, however, been developed. These are primarily in the field of English language testing. A number of them were in fact used in order to measure oral proficiency in the experiments described above. These include the "Ilyn Oral Interview" (*Chang, 1990*), the "English as a Second Language Achievement Test" (*Green and Oxford, 1995*), the "Bachman-Palmer Oral Interview Test of Communicative Proficiency" (*Pratts, 1995*), the "Test of English as a Foreign Language" (*Park, 1997*), and the "Certificate of English FCE Anchor Test" (*Purpura, 1997*).

Other standardised tests have also been developed. For example, in 1982 the American Council on the Teaching of Foreign Languages (A.C.T.F.L.), with assistance from the Educational Testing Service and the Federal Interagency Language Roundtable, drew up proficiency guidelines. These include "provisional generic descriptions" for each level of proficiency from "novice-low" to "superior" for speaking, listening, reading, writing and cultural awareness. An oral proficiency interview (and a simulated oral proficiency interview) has also been developed on the basis of these scales. These instruments have been widely used in the United States in setting entrance and exit requirements for university programmes as well as in the business world (*see for example Glisan and Foltz, 1998: 2-17*). They have also stimulated a considerable amount of research activity. For example, they were the subject of over four hundred articles in professional journals

in 1988 (*Stansfield and Kenyon, 1992:129*). However, the ACTFL proficiency guidelines have also been the subject of some criticism with suggestions, for example, that they over emphasise the importance of grammar (*Magnan, 1988:266*), that issues of rater reliability remain unresolved (*Thompson, 1995*) and that they are empirically unsupported (*Glisan and Foltz, 1998*).

Furthermore, what has also emerged from the later theoretical models is an expanded conception of the notion of proficiency, the distinguishing characteristic of which is its recognition of the importance of context beyond the sentence level to the appropriate use of language. This context includes both the discourse of which individual sentences are part and the socio-linguistic situation which to a large extent governs the nature of that discourse, in both form and function.

It would appear that this broader view of proficiency also implies that the variables that have to be taken into account in its assessment are situation dependent and that there is no such thing as a "good" or "bad" test in the abstract sense (*see for example Bachman and Palmer, 1996; Chalhoub-Deville, 1995*). Instead, the ideal language test is one where there is a high degree of similarity between performance on the language test and non-test language use. Thus, if a student's language ability is to be assessed realistically on a particular test, then the assessor has to be able to treat performance on the test as a particular authentic instance of language use in a particular situation¹⁰, or at least as a close approximation of authentic language use. This argument supports the approach taken by researchers, and practitioners who have, developed operational approaches to suit their needs, with varying degrees of theoretical input (*see for example Huang and van Naerssen, 1987; Oxford and Ehrmann, 1995 and Politzer and McGroarty, 1985*).

In interpreting proficiency ratings obtained in this way, however, inferences cannot be made about a completely general domain of language proficiency¹¹. Instead ratings should be interpreted in a more limited, but perhaps more meaningful, way as the

¹⁰ This would imply that the test has a high "construct validity", a term which pertains to the meaningfulness and appropriateness of the interpretations that can be made on the basis of the test scores.

¹¹ Arguments could perhaps be made for "local" tests with a "global" component which could facilitate comparison. Such discussion is, however, largely beyond the scope of this study.

proficiency results are indicators of an ability to use the target language under specific conditions. In other words, the nature of the construct, proficiency, in various contexts is floating rather than fixed and inextricably linked to the nature of the course as well as the course objectives. Associated with this concept is the notion that a language learner is not a "deficient monolingual" (*Cook, 1992:577*) aiming for "native speaker competence" but a person in their own right with particular language learning objectives.

This implies that comparisons across studies including language proficiency as a variable must be made with caution. It suggests, indeed, that findings in this field will relate more to trends and principles associated with successful strategic behaviour rather than to sweeping recommendations at the level of specific strategies. Finally, it also means that the provision of detailed descriptions of what is meant by terms such as "high", "low", "good", "poor", "successful" and "less successful" is particularly important in order to facilitate comparison across studies.

In conclusion, it is hardly surprising that a number of studies display contradictory findings with some experiments showing a correlation between particular strategies and learning outcomes and others failing to do so. However, bearing these reservations in mind, the above studies provide useful indications as to where the emphasis should be placed in the foreign language classroom with regard to language learning strategies. This is in spite of the fact that this field is, in many ways, still in its infancy, with much primary research needed if a more complete picture of the impact of active learner involvement in the process of foreign language acquisition is to be obtained.

2.3 Conclusion

A complex network of bi-directional relationships exists between strategy use, learning outcomes, and the factors affecting strategy use. However, this complexity does not indicate that we should abandon this field. On the contrary, it only serves to underline the importance of language learning strategies in the web of variables influencing language learning. They, at least, constitute a partially controllable factor in the language learning context.

Furthermore, experiments conducted to date in this field provide a framework within which the learning strategies associated with the achievement of higher levels of oral proficiency in German can be studied. In other words, identification of the learning strategies associated with the achievement of high levels of oral proficiency in German is feasible. It is necessary, however, to move beyond much of this research in exploring how these are used by more and less effective learners, and the way in which their use contributes to the process of oral language acquisition.

The following chapter provides an overview of the experimental design on which the primary research is based. It then describes in more depth the research methodologies employed.

Chapter Three

Experimental Design and Research Methodology

Overview

This chapter summarises the material analysed in the previous chapters and, against this background, formulates four fundamental questions. An overview of the study designed to address these questions, is then provided. The research methodology is then discussed in some detail, the issues considered relating to sample choice, measurement instruments, procedure and data analysis.

3.1 Formulation of Research Questions

As we see in the previous chapter, progress has been made in understanding the nature of language learning styles and strategies. For example, learning styles have been defined and a considerable amount of work has been done on the identification and assessment of style types. The fact that preferred learning style influences strategic behaviour is also becoming apparent, although exactly in what way is not yet clear. Finally, a limited number of studies have been conducted in order to determine whether preferred learning styles can predict proficiency. Some patterns are beginning to emerge, although again relationships are, at this preliminary stage, somewhat tenuous.

Secondly, in the field of language learning strategy research, despite the fact that certain issues relating to conceptualisation and terminology remain unresolved, there does appear to be a move towards consensus. Advances have been made in the definition, classification and assessment of language learning strategies. With regard to strategy definition, for instance, consensus is growing in favour of acceptance of a broader definition of language learning strategies, i.e. one which perceives them as including both conscious and unconscious activities, and incorporating production and communication strategies. Researchers within the field are also beginning to focus on a smaller number of the more comprehensive strategy classifications including in particular Oxford's six-way classification of strategies under the headings, metacognitive, cognitive, social, affective, memory-related and compensatory strategies. Thirdly, in terms of strategy assessment techniques, there is widespread agreement that, although there is as yet "...no fully established set of assessment procedures" (Cohen, 1998:47), the use of a multiple measurement instruments designed to tap different aspects of the language learning process is the optimum approach.

These developments have paved the way for research designed to identify the factors influencing a learner's strategic behaviour and/or to investigate the relationship between the use of particular language learning strategies and language learning outcomes. While much of this research is still in its infancy, it has nevertheless become clear that a range of factors influence a learner's strategic behaviour. Researchers agree that these include

some or all of the following: learning style, age, course of study, number of years spent studying the language, gender, self-perception of own level of proficiency, and level and type of motivation. They emphasise, however, that the relationship between these variables and both strategic behaviour and levels of proficiency is a particularly complex one in need of further investigation.

Similarly, the relationship between the use of particular language learning strategies and levels of proficiency remains in need of clarification. This is due to several factors. These include the comparative youth of the field and the resultant need for consolidation to facilitate comparison, a lack of quantitative and qualitative research conducted at the level of individual strategies, and, finally, the complex nature of the relationship between the use of language learning strategies and the levels of proficiency achieved given, for example, the quantity of external factors which could potentially be influencing the process.

However, as discussed in Chapter Two, the work conducted to date in the field of language learning strategies is capable of providing a methodological framework within which the strategies associated with the achievement of higher levels of oral proficiency can be investigated. Furthermore, if we identify the learning strategies that are associated with higher levels of oral proficiency, we can then investigate how they are employed by more and less effective learners¹. It should also be possible to explore the issue of how these strategies facilitate the process of proficiency development, in particular the development of oral proficiency, and indeed how they are perceived by the students as contributing to this process. The research questions associated with these objectives can be formulated as follows:

"Which learning strategies are associated with higher levels of oral proficiency?"

"How are these strategies employed by more effective as opposed to less effective language learners?"

¹ A more effective learner is defined here as one who achieves a higher level of oral proficiency in German as measured by the oral examination (Section 3.41, see also Introduction)

"How do these strategies contribute to the development of oral proficiency and how do students perceive them as contributing to this process?"²

Finally, in order to complete the picture, the role of key learner specific characteristics could also be investigated in this context. In particular, their relationship with general strategic behaviour, the use of the strategies identified as being associated with higher levels of oral proficiency, and with oral proficiency itself should be considered. The question associated with this issue can be formulated as follows:

"What is the relationship between the learner specific characteristics: age, gender, degree, length of time spent studying German, level, preferred learning style, level of motivation, self-perception of proficiency level and level of enjoyment associated with learning German, and:

- a) general strategic behaviour,
- b) the use of the learning strategies associated with higher levels of oral proficiency and
- c) higher levels of oral proficiency?"

Thus, four central questions have been identified. Since the first and fourth of these questions are addressed using primarily quantitative material and the second and third with qualitative data, they are numbered as in figure 3.1 (below) for the remainder of this dissertation:

² While it would provide a more comprehensive picture of the approach taken by more and less effective learners if the second and third of these questions concerned all of the strategies employed by all of the learners, this is not feasible in terms of time constraints and the burden placed on the participants. This research therefore chooses to focus on those strategies used more frequently by more effective learners as these appear to be the strategies that make a particular difference. This limitation should however be borne in mind in the interpretation of the results and the design of future research.

Figure 3.1: Research Questions

Research Question One:

"Which language learning strategies are associated with higher levels of oral proficiency?"

Research Question Two:

"What is the relationship between the learner specific characteristics: age, gender, degree, length of time spent studying German, level, preferred learning style, level of motivation, self-perception of proficiency level and level of enjoyment associated with learning German and

- a) general strategic behaviour,
- b) the use of the strategies associated with higher levels of oral proficiency and
- c) higher levels of oral proficiency?"

Research Question Three:

"How are the strategies associated with higher levels of oral proficiency employed by more and less effective language learners?"

Research Question Four:

"How do the strategies associated with higher levels of oral proficiency contribute to the development of oral proficiency and how do students perceive them as contributing to this process?"

The primary research, described below, is designed to address these questions. An outline of the experimental design is provided in the following section (3.2). Key issues relating to the research methodology and in particular to sample choice, measurement instruments, procedure and data analysis are then discussed in some detail.

3.2 Experimental Design: An Overview

In order to address the questions posed above, both qualitative and quantitative information on the general strategic behaviour and background characteristics of a large group of students is required, together with information on their level of oral proficiency in German. An initial pilot study was conducted by the researcher in April/May 1997. In summary, the study involved administering a strategy questionnaire and a questionnaire measuring learner specific characteristics to a group of students. It was also necessary to assess these students' level of oral proficiency. All of the questionnaires were administered and evaluated by the researcher who was also acted as an assessor in the oral examinations. The pilot study is now described in more detail in the following paragraphs:

The study was conducted on two second year intermediate German language groups taking the B.A. in International Marketing and Languages and the B.A. in Applied Languages at Dublin City University. Both groups were being taught by the researcher at this time. The term "intermediate" indicates that these students had studied German at post-primary level for either five or six years before entering university. The B.A. in International Marketing and Languages is an interdisciplinary degree offered jointly by the School of Applied Language and Intercultural Studies (S.A.L.I.S.) and the Business School at Dublin City University. The B.A. in Applied Languages, on the other hand, focuses on translation and interpreting and is run exclusively by S.A.L.I.S. Fourteen of these students (eight studying International Marketing and Languages and six studying Applied Languages) completed the "Strategy Inventory for Language Learning" (Section 2.23). These questionnaires took approximately fifteen minutes to complete. The students filled them out during official class time under the supervision of the researcher. They were assured in advance of this exercise that the results would not influence their final grades in any way and that the findings would be used solely for research purposes.

The students concerned then completed a background questionnaire designed to obtain information relating to their age, gender, degree, length of time studying German, level of motivation, level of enjoyment associated with learning German, self-perception of

EXPERIMENTAL DESIGN AND RESEARCH METHODOLOGY

proficiency level and preferred learning style. These questionnaires were administered directly after the S.I.L.L. again under the supervision of the researcher and took approximately five minutes to complete. During the fortnight which followed, these students sat their German oral examination. This constituted 30% of their total mark in German for year two. It consisted of a ten-minute discussion on six articles which the students had selected and prepared in advance, with two examiners, one of whom was the researcher. The content of the articles was determined by the students, the only stipulation being that they be less than twelve months old and no more than two pages in length.

Data analysis involved correlating background characteristics and learning strategies with the students' oral proficiency score using SPSS for Windows. This analysis, carried out by the researcher, permitted the identification of the learning strategies associated with higher levels of oral proficiency and the exploration of the interrelationships between student specific characteristics, general strategic behaviour, use of the learning strategies identified as being associated with higher levels of oral proficiency and levels of oral proficiency itself. The results could not be statistically significant at this stage given the sample size. However, the pilot study was useful in determining that the instruments used were capable of obtaining the information required to address research questions one and two (figure 3.1). The survey also indicated a small number of refinements necessary in the questionnaires. These included replacing "the language" with "German" and the writing of a short introduction explaining the nature of the experiment being conducted on the S.I.L.L. (Appendix A). It was stressed in this introduction that the results would be used solely for research purposes. Secondly, on the background questionnaire, the "yes/no" response to the final question, "Do you enjoy learning German?", was replaced with a series of five options ranging from "not at all" to "very much" (Appendix B). No other changes were made as the students experienced no apparent difficulties in completing the questionnaires.

In order to address questions three and four, qualitative information was also required. In-depth interviews were therefore also incorporated into the experimental design. These were designed to obtain detailed information from smaller groups of orally more and less

proficient students concerning how they implement the strategies identified as being associated with higher levels of oral proficiency, and how they believe the use of these strategies contributes to the development of oral proficiency.

It was decided to adopt the above approach for the following reasons. Firstly, as mentioned above, the objective was to obtain in particular:

- a) a general portrait of the language learning strategies employed by a group of learners and
- b) information concerning the levels of oral proficiency of this group.

With regard to strategic behaviour, information was therefore required on both mentalistic and observable behaviours. It was therefore necessary to choose from those techniques classified under the heading of "self-report techniques". As we see in Section 2.23, these can be both "introspective" and "retrospective", an introspective approach involving simultaneous completion of a task and reporting on the language learning strategies being employed. Such an approach was rejected for this study as it does not provide the information required to create a general portrait of an individual's strategic behaviour.

Immediate retrospection, involving learners reporting on the learning strategies employed by them for a particular task immediately following their completion of that task, was rejected for the same reason. Delayed retrospective techniques include, in particular, questionnaires, interviews and diary studies. It was decided not to use diaries as it was felt that these would involve more input on the part of students than they would be prepared to give, particularly given that diaries were not an official component of their second year language course. It was also felt that the use of diaries would place too great a burden on the language lecturers who had agreed to participate in this study. The decision was therefore reached to include a combination of questionnaires and in-depth interviews in the research design.

In terms of assessing the oral proficiency of the students concerned, alternatives to using the results of the official examination as a measure of students' levels of oral proficiency exist. For example, the researcher could have asked each lecturer involved in teaching

these groups to give a personal assessment of each student's level of oral proficiency based on their performance in class. While a valuable measure (Section 3.41), basing an assessment solely on teachers' evaluations can, in some cases, be misleading. Some students may avoid speaking in class making it difficult for a lecturer to accurately assess their level. Furthermore, increasing class sizes also make such an approach more difficult.

A further alternative would have been to design a proficiency test specifically for this research. Indeed, such a test could have included a battery of tasks each designed to tap different aspects of the construct oral proficiency. The use of such an approach might have reduced the possible impact of examination anxiety. However, it was felt that, as in the case of the language learning diaries, such an approach would have been overly disruptive for the students and lecturers concerned. Furthermore, oral proficiency is defined in this study as "a learner's global ability to communicate fluently accurately and appropriately in authentic or authentic-like situations relevant to their course objectives" (Introduction, pp.v, Section 2.253). Since the official oral assessments are specifically designed to determine the extent to which the students in question have reached their course objectives, their use was felt to be justified. However, a number of safeguards were incorporated into the experimental design in order to detect skewing of the results owing to examination anxiety. These are described in more detail in Section 3.41.

Thus, having provided an initial overview of the experimental design and the pilot study, the remaining sub-sections of this chapter discuss in more detail the research methodology employed.

3.3 Subjects

The sample chosen for this study consisted of one hundred and thirteen students, i.e. all students taking the core second year German language module, GE260 (German Language 6), which is offered on a range of degrees. In the case of three of these degrees, the B.A. in Communications, the B.A. in Journalism³ and the Bachelor of Business Studies, German is an option, while on the remainder it is compulsory.

³ These degrees are considered as one in this study due to the relatively similar nature of the degrees and the small numbers of students from these degrees involved in this study.

The majority (ninety) of those students taking GE260 are "ex-intermediate", in other words have studied German in school and obtained a C3 or above in higher level German in the Irish Leaving Certificate. A minority (twenty three) are "ex-abinitio" which means that they have only been students of German since their first year in college. However, like their fellow students, they began learning Irish at the ages of four or five. They also study either French or Spanish at ex-intermediate level, with the exception of the three students of Business Studies who study one foreign language only. All abinitio students follow an intensive language course comprising an average of six and a half contact hours of German language per week in their first year. This allows them to join the ex-intermediate group in year two.

This group of students was particularly suitable for this research for a number of reasons. Firstly, they had received an introduction to strategy training in their first year of university. This training took the form of a language learning diary completed in Semester One for the intermediate students and classroom-based strategy training exercises integrated into classroom activities for the abinitio students. The abinitio students also completed a language learning diary in their second European language again with the exception of the Business Studies students. As a result, both the ex-abinitio and the ex-intermediate students are more likely to be aware of the learning strategies they employ. They are therefore more likely to be able to report on their strategic behaviour. It should, however, be borne in mind that any of these students may have been exposed to some form of strategy training at primary or secondary level in either Irish or another European language. Unfortunately, the range of deviant backgrounds possible with regard to experiences of strategy training and the possibility that such training was implicit, i.e. conducted without the knowledge of the pupils, makes it impossible to measure previous strategy training and to include it as a variable in this study. As a result, conclusions concerning the impact of strategy training must remain tentative.

Secondly, this sample is not completely homogeneous with regard to such external variables as degree and length of time spent studying German. As a result, it is possible to look at their impact as well as at the impact of such internal variables as motivation

levels, self-perception of proficiency and preferred learning styles. Finally, these second year students had not yet completed their third year abroad. This could have affected the results, given that this research focuses on the more formal classroom environment.

On the days the survey questionnaires were administered, a total of one hundred and three students were present and completed the questionnaires. Of these, one hundred were included in the analysis (three of the questionnaires being incomplete).⁴ The exact breakdown of this sample by degree and level is as follows (table 3.1):

Table 3.1: Sample Breakdown

Participants / Degree	Ex-abinitios / (total in group)	Ex-intermediates / (total in group)	Total / (total in group)
B.A. in Applied Computational Linguistics (ACL)	--	7/(7)	7/(7)
B.A. in Applied Languages (AL)	8/(8)	22/(27)	30/(35)
Bachelor of Business Studies (BBS)	3/(3)	--	3/(3)
B.A. in Communications/ Journalism (CS/BAJ)	--	4/(5)	4/(5)
B.A. in International Business and Languages (IBL)	4/(7)	24/(25)	28/(32)
B.A. in International Marketing and Languages (IML)	6/(6)	22/(25)	28/(31)
TOTAL	21/(24)	79/(89)	100/(113)

⁴ Analysis of the non-respondents, on the variables for which data was available, indicates that they are on four of the seven degrees, both levels and that their mean score in the oral examination was 56. Furthermore, their scores range from 30 to 69 (std.= 9.42). Therefore, at least with regard to these variables, their summary statistics do not appear to differ significantly from those of the respondents (table 4.1). This supports the argument that the failure of 8.8% of the sample to respond and 2.6% to fully complete the questionnaires does not have a detrimental effect on the validity of the study.

3.4 Measurement Instruments

The following section describes the measurement instruments employed, their purpose and the rationale behind their selection (see also Section 2.23).

3.41 Group Oral Examination

A group oral examination was conducted in the tenth week of the second semester. These examinations were carried out during officially scheduled class times. The team of examiners consisted of all of the lecturers involved in teaching the German language module, Ge260.

In order to reduce the possibility of rater bias affecting the results, each of the groups was assessed by two examiners. Of these two examiners, one had taught the group during the semester and one was involved in second year teaching but not with the group concerned. Secondly, where possible, the pairs of examiners consisted of a native and a non-native speaker of German. Within these constraints and bearing timetabling restrictions in mind, it was possible for the researcher to act as an examiner for sixty percent of the sample of students involved in this study.

The structure of the examination was as follows: groups of either three or four students spoke for five minutes each on a different aspect of a topic of their choice. They then engaged in a fifteen minute discussion on the subject with their fellow students, the discussion being facilitated where necessary by their lecturer.

The purpose of the examination was to determine each student's level of oral proficiency (*for a similar approach to ascertaining proficiency see for example Vandergrift, 1997*). Therefore, during the oral examination, students were assessed individually on the basis of the following criteria: fluency, accuracy, vocabulary, phonetic ability and the idiomatic nature of the language they employed⁵. As discussed above, all students were assessed by two examiners. In order to calculate the individual marks, each examiner assigned each

⁵ This is the approach commonly employed in assessing second year oral examinations at Dublin City University.

EXPERIMENTAL DESIGN AND RESEARCH METHODOLOGY

student a mark from 1-10 on each of the five criteria listed above. Each examiner then added their marks and doubled them in order to give a score out of one hundred. The results in all cases were discussed by both examiners and in cases where they were not in agreement, the results allocated by both examiners were averaged.⁶

On the scales from 1-10, 4 constitutes a pass mark and 7 a first class honours mark. A pass is defined as "adequate" and a first class honours as "excellent". In more general terms, a student receiving an overall pass mark (40-54) is capable of speaking relatively freely on the chosen topic. There are, however, several pauses and the student relies to quite an extent on notes and visual aids. The language is inaccurate with a relatively large number of basic grammatical errors. Generally, pronunciation is adequate to ensure comprehension but several errors occur. The student possesses only the basic vocabulary required to make themselves understood and uses very few, if any idioms. Students in this category do succeed, however, in speaking comprehensibly on their chosen topic and in understanding and responding to questions posed in the ensuing discussion, albeit somewhat inaccurately.

Students receiving grades between 70 and 100, however, are capable of speaking freely on their chosen topic. There are very few hesitations, and notes and visual aids are used only to enhance the presentation and to generate discussion. These students have a wide range of vocabulary and use idiomatic language without apparent difficulty. They are capable of dealing with questions only indirectly related to their chosen topic. They make very few grammatical errors and errors in pronunciation are difficult to detect.

Students receiving a 2.2 (55-62) and a 2.1 (63-69) are located at intervals along a continuum between these two polar extremes. Any student failing (0-39) has not demonstrated an ability to present and discuss their chosen topic in a comprehensible and reasonably accurate manner. In general, their pronunciation is largely influenced by an English pronunciation. Their language is slow and halting and they usually fail to employ

⁶ Emphasis was placed during the assessment process on students' performances during the free discussion as opposed to during the individual presentation. Both elements were, however, taken into consideration.

idiomatic language. They display an over-reliance on notes and have difficulty understanding and/or responding to questions put to them.

Each group was also allocated a group mark. This was assigned on the basis of the content, coherence and communicative nature of the presentation and the discussion. In calculating the final mark the individual mark accounted for 70% and the group mark for 30%. The individual mark, its components and the final mark are all included as variables in the statistical analyses. Given, however, the nature of this study and the emphasis on individual learning strategies, greater emphasis is placed on the individual mark.

Each group was free to choose its own topic provided it related to an aspect of life in a German speaking country. Topics included "The History of the Volkswagen", "Terrorism in Germany" and "The Impact of German Unification". Students were further required to hand in a dossier consisting of six recent magazine or newspaper articles and a glossary of twenty terms related to their chosen topic one week in advance of the examination. The reason for choosing this approach was that a prepared presentation followed by an unstructured discussion was felt by the six lecturers involved to be a close approximation of authentic language use for this particular group of students (see Section 2.253).

Furthermore, in order to detect the possible influence of such factors as examination anxiety and nervousness on student performance, students were asked to provide, in advance, an estimation of their own level of oral proficiency defined as "an ability to communicate orally both fluently and accurately in German". Similarly, several weeks before the examination, lecturers were asked to provide an estimation of each of their students' levels of oral proficiency defined in the same way (see also Section 3.2).

Both the individual scores in the oral examination and the overall results (incorporating the individual result @ 70% and the group score @ 30%) correlated significantly with both the students' self assessment of their ability and the teachers' advance estimate of their students' oral ability (table 3.2), using the Pearson product moment correlation

coefficient with significance levels at $p < .05$ (see Section 3.5 for further discussion on both correlations and significance levels).

Table 3.2: Correlation Matrix for Measures of Oral Proficiency

	Individual Oral Result	Overall Oral Result
Teacher's Estimate	$r = .7089$	$r = .6657$
Significance	$p = .000$	$p = .000$
Student's Estimate	$r = .4542$	$r = .5145$
Significance	$p = .000$	$p = .000$

This supports the claim that the oral proficiency examination was a valid measurement instrument and indicates that examination conditions did not significantly distort the results. In support of this approach, Boekaerts (1991), for example, in her article on subjective competences, appraisals and self-assessment, argues that a relationship exists between ability, or objective competence, and self-perception of ability, subjective competence. This position is supported by a number of other researchers including, for example, MacIntyre, Noels and Clement (1997). They argue that one of the possible reasons for this correlation is that a low self-perception of ability leads to higher levels of performance anxiety which results in a poorer performance.

Thus the existence of a relationship between ability as measured by the oral examination described above and students' perception of their oral ability increases the validity of the oral examination. The fact that the strength of the correlation between students' estimations and their actual scores is relatively weak compared with that between the teachers' estimations and the actual scores may be explained by the fact that some students have difficulty in accurately assessing their own ability, tending in some cases to over and in others to underestimate it. Indeed, MacIntyre, Noels and Clement (1997) suggest that over anxious students tend to underestimate their level of competence while less anxious students overestimate theirs.

The further existence of a positive correlation between teachers' assessment of each student's proficiency level and their score in the oral examination can only serve to support arguments in favour of the validity of the examination, as it indicates that student performance in the oral examination was not significantly out of line with their performance in class during the semester. Similarly, in a study conducted by Glisan and Foltz (1998), the results indicate that, on the basis of their performance in class, teachers could accurately predict the oral proficiency ratings of their students in an external examination. In their opinion (1998:14), teachers are able to develop accurate intuitions regarding their students' levels of oral proficiency. The existence of a significant positive correlation between teachers' predictions and students' actual scores could, of course, also indicate that grading is influenced by teachers' preconceptions concerning the ability of particular students. While this is not particularly desirable, it may reduce the possible impact of examination anxiety resulting in an uncharacteristic performance. Furthermore, as discussed at the beginning of this section, the presence of a second examiner and the averaging of marks in cases of disagreement should, in any case, assist in reducing the impact of rater bias.

3.42 Strategy Inventory for Language Learning

The S.I.L.L. (Appendix A) was used to identify the frequency of strategy use by all participants. It was modified slightly by the author to make it suitable for second year students of German. Modifications included a new introduction explaining the purpose of the survey, the replacement of "the language" with "German" throughout the questionnaire, and the inclusion of a section in which survey participants could fill in their name and course of study.

The S.I.L.L. is one of the most widely used and comprehensive strategy assessment questionnaires currently available (see Section 2.23 for a more in-depth discussion on its merits and limitations). It assesses the frequency with which learners use eighty language learning strategies. These strategies are categorised under the following headings: memory-related (fifteen strategies), cognitive (twenty five), compensatory (eight), metacognitive (sixteen), social (nine) and affective (seven).

Learners allocate a number from one to five to each of the strategies listed. "One" indicates that a particular strategy is "never or almost never true" of them, "two" that it is "generally not true" of them, "three" that it is "somewhat true" of them, "four" that it is "generally true" of them and "five" that it is "always or almost always true" of them. As the S.I.L.L. is a published strategy inventory, its use will make it easier for other researchers, should they choose to use this inventory, to make close comparisons.

Finally, a structured questionnaire was chosen in this instance because it provides a broad range of coverage of strategy use across a range of tasks for a large group of students. It is also non-threatening, permits the derivation of precise quantitative measures and allows responses to be limited to the information required.

3.43 Background Questionnaire

The purpose of the background questionnaire (Appendix B) was to elicit information on such factors as gender, degree, age, length of time spent studying German, whether or not the student was ex-abinitio or ex-intermediate, self-perception of proficiency level in German, level of motivation with regard to becoming proficient in German, degree of enjoyment associated with learning German and preferred learning style. In order to measure learning styles, students were asked to state which of five pairs of statements were closest to their approach to learning German. The statement pairs correspond to the following learning styles: holistic/global versus focused/analytic, intuitive/random versus concrete/sequential/sensing, judging/closure versus perceiver/open, extroverted versus introverted and visual versus auditory (for similar approaches see Ehrman and Oxford (1995:69); see also Sections 2.1 and 2.24 for discussion on learning styles and the factors influencing choice of learning strategies respectively).

3.44 In-depth Interview

In-depth interviews were carried out with twenty of the students who had completed the questionnaires (Sections 3.42 and 3.43) and taken the oral examination (Section 3.41). This particular sample of students consisted of all of those who had responded positively

to a request, made to all second year students of German, by their lecturers and the researcher to participate in an informal discussion about their approach to language learning.

Each interview was conducted on a one-to-one basis by the researcher in her office with all interviews being conducted in an informal manner and lasting approximately thirty minutes. To begin, students were informed that the interviews were purely for research purposes and would not influence their grades in any way. They were then presented with a list of the strategies which had at this stage been identified as being associated with higher levels of oral proficiency (Research Question One). The following questions were posed by the researcher for each strategy and the discussion allowed to develop naturally for each of these areas:

1. Can you tell me what exactly you mean by (strategy x)?
2. When do you use this strategy?
3. How do you think that using this strategy improves your German?

Where students appeared to have difficulties responding, the prompts described in the interview protocol (Appendix C) were used. All participants gave permission for the interviews to be recorded. This was done by the researcher.

The purpose of these in-depth interviews was to supplement the information obtained using the structured questionnaires. Their function was to determine in some detail what orally more proficient students mean when they say they employ the strategies found to be associated with higher levels of oral proficiency, and the way in which they feel their use contributes to the acquisition process. In other words, the in-depth interviews were designed to build on the information obtained in response to questions one and two in order to address questions three and four.

Qualitative interviews were chosen to address these questions because they allow students to follow their own train of thought with the interview questions as a guide (Appendix C). The advantage of this approach lies in the richness of the descriptions obtained of the respondents' use of learning strategies.

The sample of students interviewed (see paragraph one of this section) consisted primarily of those obtaining the highest scores in the oral examination (table 3.3). Four students achieving scores in the "middle" of the range and four scoring between 40 and 54 were also interviewed for the purpose of comparison.

Table 3.3: Participants in In-depth Interviews

Oral Result Degree/Level	64+	55-63	40-54
AL2 ex-abinitio	2		
ex-intermediate	2	2	2
IML2 ex-intermediate	1		
BS2 ex-abinitio		1	2
IBL2 ex-intermediate	6	1	
CS2/BAJ2 ex-intermediate	1		
Totals	12	4	4

The sample size of twenty is large compared with the samples used in similar studies in this field (*for further discussion on sample size in qualitative research, see Ehrman and Oxford, 1990*). It was decided to interview this number in order to increase the generalisability of the results to similar populations. Given the size of the totals in the cells, however, sweeping generalisations concerning individual degrees cannot be made.

3.5 Procedure

Students completed the S.I.L.L. and the background questionnaire in weeks six and seven of the second semester. These questionnaires were completed during class-time. Respondents were advised in advance that the results would be used solely for research purposes and would not affect their grades. Completion of both questionnaires took approximately twenty minutes in total. In weeks nine and ten, students sat their oral

examinations. A second examiner and the class lecturer were present at all of the examinations and an average of both examiners' grades recorded. Finally, following completion of the statistical analysis (Section 3.61), the twenty students achieving the highest and lowest scores in the oral examination were interviewed and the resulting data analysed qualitatively (Section 3.62).

3.6 Data Analysis

3.61 Quantitative Analysis

The answers to questions one, two and four⁷ were determined using SPSS statistical analysis for Windows. This was conducted as follows:

Firstly, in order to determine underlying trends and patterns in the data, descriptive summary statistics (mean, variance, range, standard deviation, skewness, standard error of skewness, maximum and minimum) were calculated for all continuous, numerical variables. These variables are used to describe the results obtained in the oral examination and the extent of use of language learning strategies.

A factor analysis (Appendix D) was then conducted on the eighty strategies measured by the S.I.L.L.⁸ As we saw in Section 2.23, this procedure identifies the learning strategies that vary in synchrony with each other and therefore appear to be used in concert with each other. Thus, this procedure provided an insight into the combinations of strategies used by this particular group (*see Oxford and Burry-Stock, 1995:7 for discussion on this point*). A seven factor varimax factor analytic solution was used and loadings required to be greater than or equal to .30 for the item to be included as part of a factor. Communalities, designed to show the proportion of variance accounted for by each variable, were set at 1.0 (*see also Green and Oxford, 1995*).

⁷ Research question four was addressed on the basis of the results of both the quantitative and the qualitative analyses.

⁸ Although the measurement of eighty strategies on one hundred subjects is a high variable to subject ratio, it can nevertheless provide some useful indications of tendency. This limitation must, however, be borne in mind in interpreting the results.

Then, in order to investigate the relationships between general strategic behaviour and levels of oral proficiency, correlations were calculated between the level of oral proficiency of each student and each of the following variables: total number and frequency of strategies employed, the frequency score on each factor, and the total number and frequency of strategies employed within each S.I.L.L. category.

Three statistical analyses of the data were then conducted in order to investigate the relationship between the individual learning strategies and oral proficiency levels. Three procedures were employed for a number of reasons. Firstly, to increase the comparability of the findings with those of other researchers. Secondly, to ensure that no relationships were overlooked and, thirdly, so that they could provide a countercheck on one another. The procedures employed were multiple regression analysis, bivariate correlational analysis, and one way analysis of variance (ANOVA) (Appendix D). Each of these procedures is now described in turn:

Firstly, a multiple regression analysis was conducted in order to achieve an initial indication of the strategies associated with higher levels of proficiency. This procedure allows the best predictors of the dependent variable (oral proficiency) to be identified from all of the independent variables (learning strategies) considered together. In other words, it enables the researcher to get a better picture of the relationship between the independent and dependent variables when considering all independent variables simultaneously (*for a similar approach see Huang and Van Naerssen, 1987*).⁹

However, due to the large number of independent variables included in the regression model, i.e. the eighty language learning strategies, the possibility existed that language learning strategies closely associated with higher levels of proficiency could be obscured as a result of high intercorrelations between the language learning strategies (*Van Hout, 1998*). Therefore, the regression analysis was complemented by bivariate correlations which were calculated between each individual learning strategy employed by each student and each oral proficiency score. This procedure further facilitated the

⁹ In line with the majority of studies in this field (*see for example Nyikos and Oxford, 1993; Green and Oxford, 1995*), the raw scores on the S.I.L.L. scales were treated as continuous rather than ordinal data for both the correlation and regression analyses in order to give us the benefit of these analyses.

identification of strategies associated with the achievement of higher levels of oral proficiency in German. The strength of the correlations ("r", where $r^2\%$ of the variance in one of the variables in the correlation can be accounted for by the variance in the other) was also measured using Spearman's Rho as it provides a more conservative estimate than the more commonly employed Pearson product moment statistic when used with ordinal data (*see also Green and Oxford, 1995*). The results were, however, compared with those that would have been obtained using Pearson product moment statistic and very few negligible differences with no apparent pattern were found.

Only correlations ("r") of $r \geq .20$ or better are reported for all of the statistical analyses. Although it is recognised that .20 is low, findings at this level are also reported so that future research can carry out further tests with other populations (*for a similar approach see Ehrman and Oxford, 1995*). The significance or "p" value was set at $p < .05$. This value represents the degree of rarity of the results. In other words, a significance less than .05 means that there is less than a 5% chance of any observed relationships occurring by chance. Exact significance levels are reported for significant results so that readers may see for themselves the level of significance.

Thirdly, a one-way analysis of variance (ANOVA) was carried out. This procedure compares the means of several sub-groups in a sample in order to determine whether they differ significantly from each other. In this case, it was used in to determine whether significant differences in average use of each strategy exist between students grouped according to the grade they achieved in the oral examination (*for a similar approach see Chang, 1990; Huang and Van Naerssen, 1987*). This procedure looks for the same information as the regression and bivariate correlational analyses, in that it seeks to identify significant differences in strategy use between students achieving different levels of oral proficiency. However, since it uses a different approach, it can be used to both verify and add to the information achieved using these procedures. Once the strategies associated with higher levels of proficiency had been identified, their frequency of usage was then correlated with the individual aspects of oral proficiency, i.e. fluency, accuracy, use of idiomatic language, pronunciation and vocabulary (Section 3.21, 4.5), in order to determine whether significant relationships could be detected.

Finally, independent samples t-tests and ANOVAs¹⁰ were carried out in order to check for possible relationships between the background characteristics and general strategic behaviour (Appendix D). The concept, general strategic behaviour, was once again operationalised in the form of the following variables: the total number and frequency of language learning strategies employed, the total frequency scores on factors one to seven, and the total number and frequency of strategies employed within each S.I.L.L. category. T-tests and ANOVAs were also used to determine the existence or otherwise of significant relationships between the background characteristics and the frequency of use of the "successful" learning strategies, identified using the procedures described above, as well as in investigating possible relationships between the background characteristics and levels of oral proficiency.

3.62 Qualitative Analysis

The interview data was transcribed in summary form from audio cassettes. This involved summarising each interviewee's response to each question in a manner which reflected the content and spirit of the response. Direct quotations and examples given by the interviewee were included in the summary in order to give an impression of the flavour of the response. Finally, a comment on each interview was recorded. This reflected the interviewer's opinion of the ease with which the students spoke of their language learning, their mastery or otherwise of vocabulary useful in describing language learning and the extent to which it was necessary for the interviewer to follow up on the initial question with prompts in order to obtain a response.

Summary transcriptions were employed because the primary focus was the content as opposed to the discourse of students' responses. The summary content analysis was conducted with particular reference to research questions three and four. Common patterns among the more proficient communicators were identified and compared with responses by the orally less proficient students.

¹⁰ T-tests were used for those background variables creating two sub-samples within the sample, i.e. gender, level and style types while analyses of variance were used for the remaining background variables as they resulted in more than two sub-samples being created.

Chapter Four

Presentation of Results

PRESENTATION OF RESULTS

Overview

This chapter presents the results of the primary research. The introduction reviews underlying trends and patterns in the data as revealed by the key summary statistics. Detailed findings relating to each of the four research questions are then considered in turn.

4.1 Introduction

Underlying trends and patterns in the data set were measured using descriptive summary statistics. This section describes the most important of these¹.

In terms of the oral examination, table 4.1 indicates that the results range from a pass mark of 40% to a first class honours mark of 75%. There are no fails in this particular sample, the mean or average mark being 59%. Variability around the mean is indicated by the standard deviation and the variance, i.e. the square of the standard deviation. Skewness, on the other hand, measures the extent to which a distribution of values deviates from symmetry around the mean. A value of "0" represents a symmetric or evenly balanced distribution while a positive skewness indicates a greater number of smaller values and a negative skewness, as we see here, a greater number of larger values. A skewness value between +1 and -1, as in the case of this data set, is considered excellent for most psychometric purposes (*George and Mallery, 1995:46*). A standard error statistic, in this case standard error of skewness, is designed to be a measure of stability or sampling error. A small value (what is "small" depends on the nature of the distribution) indicates greater stability or smaller sampling error. Here the standard error of skewness value is relatively small indicating low sampling error.

Table 4.1: Summary Statistics/Individual Results in the Oral Examination

Mean	58.74	Std. deviation	7.52
Variance	56.48	Skewness	-0.49
S.E. Skew	0.24	Range	35
Minimum	40	Maximum	75
<i>Valid Observations</i>	<i>100</i>	<i>Missing Observations</i>	<i>0</i>

The data differs slightly with regard to the overall marks obtained by students, i.e. the combination of the individual and group mark.² Here the average is slightly higher, 60%,

¹ The summary statistics relating to the background characteristics are reviewed in Section 4.2.

² However, as we would expect, the final marks and the individual scores correlated very strongly, $r=.9316$ $p=.000$.

PRESENTATION OF RESULTS

with a smaller standard deviation from the mean and a smaller range of results (table 4.2). This increased "clustering" is to be expected when dealing with a group mark.

Table 4.2: Summary Statistics/Final Results in Oral Examination

Mean	59.79	Std. deviation	6.08
Variance	36.96	Skewness	-0.55
S.E. Skew	0.24	Range	29
Minimum	43	Maximum	72
Valid Observations	100	Missing Observations	0

Digressing for a moment, a further, not unexpected, fact that emerged from preliminary analyses of the data is that the results in the oral examination correlated significantly (as measured by the Pearson correlation coefficient) with those obtained by these students in their individual written and aural examinations sat in the previous semester (table 4.3).

Table 4.3: Correlations Between the Results in the Oral, Aural and Written Examinations

	Final Result (oral)	Individual Result (oral)
Written Result	r=.6863 p=.000	r=.6997 p=.000
Aural Result	r=.6489 p=.000	r=.6031 p=.000

This finding serves to highlight the fact (see also "Introduction") that while students may be naturally better at one aspect of proficiency than another, it is impossible to divide language ability cleanly into four skills with much of the necessary knowledge and many of the necessary skills overlapping and influencing performance in reading, writing, speaking and listening.

In terms of the number of language learning strategies employed, the following information was obtained (table 4.4):

Table 4.4: The Number of Language Learning Strategies Employed

Mean	49.74	Std. deviation	9.46
Variance	89.57	Skewness	-0.32
S.E. Skew	0.24	Range	45
Minimum	25	Maximum	70
<i>Valid Observations</i>	<i>100</i>	<i>Missing Observations</i>	<i>0</i>

Quite a large difference exists between the maximum and minimum number of strategies employed, i.e. 45. The standard deviation of 9.46 from the average number employed, 50, is also relatively large indicating significant variation in the total number of strategies used by the respondents.

Similarly, if we break down the total number of strategies into the six categories specified by the S.I.L.L. (table 4.5), it becomes clear that the number of strategies employed within each category also varies widely as indicated by the high standard deviations and large ranges. Furthermore, it is also clear that more cognitive and metacognitive strategies are employed by the respondents. However, in terms of percentages, a higher percentage of the compensatory strategies are employed than of the strategies in any other category. On average, however, a high percentage of cognitive strategies are also employed closely followed by the metacognitive and then the social strategies, with the affective and memory-related strategies bringing up the rear.

Table 4.5: Quantity of Strategies Employed in Each S.I.L.L. Category

Category	Memory	Cognitive	Compen- satory	Meta- cognitive	Affective	Social
Strategy No. on the <i>S.I.L.L. (Append. A)</i>	<i>1-15</i>	<i>16-40</i>	<i>41-48</i>	<i>49-64</i>	<i>65-71</i>	<i>72-80</i>
Average Number used	6.46	17.51	6.25	10.72	3.12	5.83
Standard Deviation	2.12	3.44	1.33	2.85	1.35	2.09
Range	10	15	5	13	6	9
Maximum	12	24	8	16	6	9
Average Percentage used	43%	70%	78%	67%	45%	65%

Factor analysis facilitated a more in-depth analysis of strategy use by this particular group of respondents. As we saw in the previous chapter (Section 3.51), factor analysis is a technique that statistically links related elements, in this case learning strategy items, that vary in synchrony with each other, thereby forming a cluster of items bound together by one common underlying factor.

Using factor analysis seven categories were identified into which the learning strategies, measured by the questionnaire, appear to fit for this particular sample. The factors are as follows (figure 4.1):

Figure 4.1: Factor Listing

<i>Factor One: "Planning, Organising and Evaluating Learning and Revision"</i>
When learning a new German word, I put the new word in a sentence. (2) ¹
I revise often. (13)
I schedule my revision so that the revision sessions are initially close together in time and gradually become more widely spread apart. (14)
I go back to refresh my memory of material I learned much earlier. (15)
I check over what I write in German. (19)
I make summaries of German material. (33)
I preview the language lesson to get a general idea of what it is about, how it is organised and how it relates to what I already know. (49)
I try to find out all I can about how to be a better language learner by reading books or articles or by talking with others about how to learn. (52)
I arrange my schedule to study and practice German consistently not just when there is the pressure of a test. (53)
I organise my language notes to record important language information. (55)
I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run. (56)
I plan what I am going to accomplish in language learning each day or week. (57)
I try to notice my language errors and find out the reason for them. (62)
I learn from my mistakes in using German. (63)
I evaluate the general progress I have made in using German. (64)
I work with other language learners to revise or share information. (75)
I have a regular language learning partner. (76)

¹ The number given in brackets after each strategy is its number on the S.I.L.L. (Appendix A)

PRESENTATION OF RESULTS

Factor Two: "Authentic language use, primarily for communicative purposes"

When learning a new German word, I create associations between new material and what I already know. (1)

When learning a new German word, I remember where the new word is located on the page or where I first saw or heard it. (6)

I imitate the way native speakers talk. (17)

I initiate conversations in German. (23)

I watch television or films or listen to the radio in German. (24)

I try to think in German. (25)

I read for pleasure in German. (27)

I write personal notes, messages, letters or reports in German. (28)

I try to understand what I have heard or read without translating it word for word into my own language. (37)

I am cautious about transferring words or concepts directly from my language to German. (38)

I decide in advance to pay attention to specific language aspects, for example I focus on the way certain sounds are pronounced. (51)

I take responsibility for finding opportunities to practise German. (60)

I actively look for people with whom I can speak German. (61)

I try to relax whenever I feel anxious about using German. (65)

I make encouraging statements to myself about learning German. (66)

Factor Three: "Analysis of German as a system"

When learning a new German word, I visualise the spelling of the new word in my mind. (7)

I read a story or dialogue several times until I can understand it. (18)

I use familiar words in different combinations to make new sentences. (22)

I skim the reading passage first several times to get the main idea, then I go back and read it more carefully. (29)

I seek specific details in what I hear or read. (30)

I apply general rules to new situations when using German. (34)

I look for similarities and contrasts between German and my own language. (36)

I look for patterns in German. (39)

I develop my own understanding of how German works, even if I sometimes have to revise my understanding based on new information. (40)

When I do not understand all the words I read or hear, I guess the general meaning by using any clue I can find, for example clues from the context or situation. (41)

When I cannot think of the correct expression to say or write, I find a different way to express the idea, for example I use a synonym to describe the idea. (46)

I prepare for a language task by considering the nature of the task, what I have to know and my current language skills. (58)

I clearly identify the nature of the language activity, for instance in a listening task I might need to listen to the general idea or specific facts. (59)

PRESENTATION OF RESULTS

Factor Four: "Getting the feel of German"

I use idioms or other routines in German. (21)

I use reference materials such as dictionaries to help me use German. (31)

I take notes in class in German. (32)

I read without looking up every unfamiliar word. (42)

I make up new words if I don't know the right one. (47)

When someone is speaking German I try to concentrate on what they are saying and put other unrelated topics out of my mind. (50)

I arrange my physical environment to promote learning, for example I find a quiet place in which to revise. (54)

I talk to someone I trust about my attitudes and feelings about the language learning process. (71)

Factor Five: "Relaxing about and remembering German"

When learning a new German word, I associate the sound of a new word with the sound of a familiar word. (4)

When learning a new German word, I use rhyming to remember the word. (5)

I remember the word by making a mental image of it or by drawing a picture. (6)

When learning a new German word, I use combinations of sounds and images to remember the new word. (8)

When learning a new German word, I physically act out the new word. (12)

I give myself a tangible reward when I have done something well in my German language learning. (68)

I pay attention to signs of stress that might affect my learning of German. (69)

In conversations with others in German, I ask questions in order to be as involved as possible and show that I am interested. (78)

I pay close attention to the thoughts and feelings of other people with whom I interact in German. (80)

Factor Six: "Learning through social interaction in German"

I practise the sound or alphabet of German. (20)

I ask others to clarify that I have understood or said something correctly. (73)

I ask others to correct my pronunciation. (74)

When I'm talking to a native speaker, I try to let them know if I need help. (77)

Factor Seven: "Making up for gaps in knowledge"

When learning a new German word, I place the new words in a group with others that are similar in some way. (3)

In a conversation I anticipate what the other person is going to say based on what has been said so far. (43)

If I am speaking and cannot think of the right expression, I use gestures or switch back to my own language momentarily. (44)

I ask the other person to tell me the right word if I cannot think of it in a conversation. (45)

I direct the conversation to a topic for which I know the words. (48)

I keep a private journal where I write my feelings about learning German. (70)

PRESENTATION OF RESULTS

Clearly, Oxford's six way division of strategy type in the S.I.L.L., obtained using factor analysis of the results obtained by a group of language learners in the United States (Section 2.23), also has relevance for this group of Irish students as a number of similar categories emerged (table 4.6) from this factorisation of the eighty language learning strategies. While an exact correspondence does not exist between the categories, there are obvious parallels. Furthermore, even at this preliminary stage of data analysis, an emphasis on cognitive and metacognitive strategies by students in this sample is beginning to appear. Affective strategies play a less important role.

Table 4.6: Strategy Factors: A Comparison

S.I.L.L. Categorisation	Categorisation emerging from factor analysis of current data set
Memory <i>Strategies 1-15</i>	Factor 5: "relaxing about and remembering German" (also includes "affective" & "social" strategies) <i>Strategies 4, 5, 6, 8, 12, 68, 69, 78, 80</i>
Cognitive <i>Strategies 16-40</i>	Factor 2: "authentic language use primarily for communicative purposes" (also includes "metacognitive" strategies) <i>Strategies 1, 6, 17, 23, 24, 25, 27, 28, 37, 38, 51, 60, 61, 65, 66</i> Factor 3: "analysis of German as a system" <i>Strategies 7, 18, 22, 29, 30, 34, 36, 39, 40, 41, 46, 58, 59</i>
Compensatory <i>Strategies 41-48</i>	Factor 7: "making up for gaps in knowledge" <i>Strategies 3, 43, 44, 45, 48, 70</i>
Metacognitive <i>Strategies 49-64</i>	Factor 1: "planning, organising and evaluating learning and revision" <i>Strategies 2, 3, 14, 15, 19, 33, 49, 52, 53, 55, 56, 57, 62, 63, 64, 75, 76</i> Factor 4: "getting the feel of German" (includes cognitive strategies) <i>Strategies 21, 31, 32, 42, 47, 50, 54, 71</i>
Affective <i>Strategies 65-71</i>	no corresponding factor: some affective strategies included, however, in factor five, "relaxing about and remembering German"
Social <i>Strategies 72-80</i>	Factor 6: "learning through social interaction in German" <i>Strategies 20, 73, 74, 77</i>

The information in this section, thus paints an initial picture of trends and patterns within the data set. Building on this information, the following section addresses the first research question.

PRESENTATION OF RESULTS

4.2 Research Question One: *Which language learning strategies are associated with higher levels of oral proficiency?*

The first step in addressing this question involves investigating whether significant correlations exist between oral proficiency and any of the following variables: the total number of strategies employed, the total number of strategies employed within each S.I.L.L. category, the total frequency³ of strategies employed and the frequency of strategies employed within each S.I.L.L. category as well as within each of the new factors just identified (Section 4.1). In other words, it is important to find out whether a relationship exists between the quantity and/or frequency of strategy use and the level of oral proficiency displayed by the student.

In answer to this question, the results (measured using the Pearson correlation coefficient) indicate that significant positive correlations exist between the total number of strategies employed and the frequency with which they are employed, and oral proficiency (table 4.7).

Table 4.7: The Relationship Between the Number and Frequency of Strategies Employed and Oral Proficiency

Number/Frequency	Individual Oral Result
Total Number of Strategies Employed	r= .263 p= .008
Total Frequency of Strategies Employed	r= .278 p= .005

In other words, the more proficient the students, the more strategies they tend to use more frequently.

In terms of the six individual categories on the S.I.L.L., the following picture emerged (table 4.8). Two of the S.I.L.L. categories, i.e. the cognitive and metacognitive strategy groupings correlated positively with oral proficiency at a significant level. In other

³ The total frequency score for a student equals the sum of the individual frequency scores on each strategy.

PRESENTATION OF RESULTS

words, respondents who use a greater number of strategies in each of these categories and/or use them more frequently score more highly in their oral examination.

Table 4.8: Correlations Between Strategy Use on the S.I.L.L. Categories and Oral Proficiency

Strategy Type (<i>No. on S.I.L.L.</i>) Total Use / Frequency of Use	Oral Result
Cognitive Strategies (16-40):	
Total	$r=.3314$ $p=.001$
Frequency	$r=.3342$ $p=.001$
Metacognitive Strategies (49-64):	
Total	$r=.2223$ $p=.026$
Frequency	$r=.2303$ $p=.021$
Social Strategies (72-80):	
Total	$r=.1194$ $p=.237$
Frequency	$r=.1431$ $p=.156$
Memory Strategies (1-15):	
Total	$r=.1040$ $p=.303$
Frequency	$r=.1005$ $p=.320$
Affective Strategies (65-71):	
Total	$r=.0031$ $p=.976$
Frequency	$r=.1032$ $p=.307$
Compensatory Strategies (41-48):	
Total	$r=.0278$ $p=.783$
Frequency	$r=-.0199$ $p=.844$

If we look at the results of the same analysis this time conducted using the seven factors identified by the factor analysis (Section 4.1), interesting patterns appear (table 4.9). Significant correlations with oral proficiency exist for factors one and two with the correlations with oral proficiency approaching significance for factors three and six albeit at a weaker level. This is not surprising given that factors one, two and three are composed primarily of cognitive and metacognitive strategies. More important perhaps is the fact that the social strategies contained in factor six may also play a role in this

PRESENTATION OF RESULTS

analysis. It suggests that particular combinations of social, cognitive and metacognitive strategies are used by those students achieving higher levels of oral proficiency.

Table 4.9: Correlations Between Frequency of Strategy Use on the Factors and Oral Proficiency

Factor description	Oral Result
Factor 1 "Planning, Organising and Evaluating" (Metacognitive)	$r=.2695$ $p=.007$
Factor 2 "Authentic Language Use" (Cognitive/Metacognitive)	$r=.3142$ $p=.001$
Factor 3 "Analysis of German as a System" (Cognitive)	$r=.1810$ $p=.072$
Factor 4 "Getting the Feel of German" (Metacognitive/Cognitive)	$r=.0975$ $p=.334$
Factor 5 "Relaxing and Remembering German" (Memory/Affective)	$r=-.1449$ $p=.150$
Factor 6 "Social Interaction in German" (Social)	$r=.1917$ $p=.056$
Factor 7 "Making up for Gaps in Knowledge" (Compensatory)	$r=-.0283$ $p=.780$

PRESENTATION OF RESULTS

However, in order to identify the specific strategies associated with higher levels of proficiency, it is necessary to move beyond the level of "category" or strategy type, a level at which much research in this field has to date remained, to the level of the individual strategy. As described in Section 3.51, three statistical techniques were used to do this. The findings obtained using these techniques are presented in following pages.

The results of the multiple regression indicate that ten strategies are significantly associated with higher individual levels of oral proficiency (table 4.10). However, four of these strategies correlate negatively with oral proficiency.

Table 4.10: Variables in the Multiple Regression Equation

Variable (No. on S.I.L.L.)	B	SE B	Beta	T	Sig T
Alphabet (20)	0.88	0.44	0.15	2.03	0.05
Associate (1)	1.74	0.55	0.24	3.17	0
Goals (56)	2.41	0.53	0.39	4.52	0
Partner (76)	2.27	0.61	0.3	3.69	0
Preview (49)	-2.2	0.67	-0.28	-3.27	0
Relax (65)	1.25	0.57	0.17	2.2	0.03
Revise (13)	-2.46	0.72	-0.28	-3.41	0
Sentence (2)	1.99	0.54	0.29	3.67	0
Similard (36)	-1.39	0.51	-0.2	-2.74	0.01
Stress (69)	-1.71	0.51	-0.26	-3.36	0
(Constant)	50.58	3.64		13.91	0

The regression model nevertheless succeeds in identifying six strategies positively associated with oral proficiency.⁴ These are, in the order in which they were included in the regression equation: "I try to relax whenever I feel anxious about using German", "I plan my goals for language learning, for example how proficient I want to become or

⁴ The B scores in the above table are the coefficients and constants for the regression equation that measures predicted values for the oral result; the SE B, or standard error of B, is a measure of the stability or sampling error of the B-values; the Beta scores represent the standardised regression coefficients; T is B divided by the standard error of B; and finally "Sig T", or the significance of T, represents the probability that these T-values could occur by chance (see also, for example, George and Mallery, 1995:170).

PRESENTATION OF RESULTS

how I **might** want to use the language in the long run", "When learning a new German word, I **put** the word in a **sentence**", "I have a regular language learning **partner**", "I create **associations** between new material and what I already know", "I practise the sound or **alphabet** of German".

However, as discussed in Section 3.51, the possibility exists that some of the language learning strategies positively associated with oral proficiency may not appear in this model because of high intercorrelations between the strategies. In order to ensure that no key strategy is being ignored, correlations were calculated between all of the language learning strategies and oral proficiency. Table 4.11 contains a list of all of the strategies correlating significantly with proficiency in a positive direction (it includes one strategy contained in the regression equation that is not significant but approaching a significant positive correlation, i.e. "associate".).

The strategies with a negative score on the regression model all correlated negatively with proficiency on an individual basis. Their scores were as follows: "I **preview** the language lesson to get a general idea of what it is about, how it is organised and how it relates to what I already know", $r=-.018$, $p=.852$, "I **revise** often", $r=-.0662$, $p=.513$, "I look for **similarities** and contrasts between German and my own language", $r=-.1635$, $p=.104$ and "I pay attention to signs of **stress** that might affect my learning of German" $r=-.1059$, $p=.294$. Thus, it appears that these strategies are not significantly associated with oral proficiency. Interestingly one strategy correlated significantly with proficiency in a negative direction. This was the compensatory strategy, "If I am speaking and cannot think of the right expression, I use gestures or switch back to my own language momentarily" ($r=-.2091$, $p=.037$; $s=-.2458$, $p=.014$).

PRESENTATION OF RESULTS

Table 4.11: Language Learning Strategies Demonstrating a Significant, Positive Correlation with Oral Proficiency

Strategy (Number on S.I.L.L.)	Correlation r= Pearson s=Spearman's Rho
"I try to relax whenever I feel anxious about using German" (65)	r=.3765 p=.000 s=.3160 p=.001
"I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run" (56)	r=.3436 p=.000 s=.3003 p=.002
"When learning a new German word, I put the word in a sentence " (2)	r=.2717 p=.006 s=.2476 p=.013
"I have a regular language learning partner " (76)	r=.2406 p=.016 s=.2690 p=.007
"I create associations between new material and what I already know" (1)	r=.1919 p=.056 s=.1471 p=.144
"I practise the sound or alphabet of German" (20)	r=.1946 p=.052 s=.2251 p=.024
"I check over what I write in German" (19)	r=.3313 p=.001 s=.2597 p=.009
"I try to notice my language errors and find out the reason for them" (62)	r=.2354 p=.018 s=.1994 p=.047
"I take responsibility for finding opportunities to practise German" (60)	r=.2331 p=.020 s=.2014 p=.045
"I plan what I am going to accomplish in language learning each day or week" (57)	r=.2064 p=.039 s=.2497 p=.012

This analysis does indeed appear to indicate that a number of strategies were obscured in the regression model. It was therefore decided to include the strategies, "I check over what I write in German", "I try to notice my language errors and find out the reason for them", "I take responsibility for finding opportunities to practise German" and "I plan what I am going to accomplish in language learning each day or week" in the list of those most closely associated with higher levels of oral proficiency. It was decided to stop at this point as more than ten strategies would have been difficult to investigate in any depth in the qualitative interviews and values of "r" less than .2 are, in any case, considered to be somewhat unreliable (Section 3.51).

PRESENTATION OF RESULTS

The analyses of variance support the analyses conducted above with significant differences in average strategy use by category of oral proficiency appearing on the first three strategies selected by the regression model, "I try to **relax** whenever I feel anxious about using German", "I plan my **goals** for language learning, for example how proficient I want to become or how I might want to use the language in the long run, "When learning a new German word, I put the word in a **sentence**". Significant differences also appear with regard to the first strategy selected by the individual correlational analysis, "I **check** over what I write in German".

For example, when responding to the strategy "I try to **relax** whenever I feel anxious about using German", students achieving higher grades marked "generally true of me" or "always or almost always true of me" on the learning strategies questionnaire significantly more frequently than did those achieving lower grades (Table 4.12).

Table 4.12: Analysis of Variance: Relax by Oral Grade

Oral Result	Mean use of Strategy "Relax" ¹	Standard Deviation	Cases
70+ (1.1)	5		1
63-69 (2.1)	3.83	0.92	35
55-62 (2.2)	3.74	1.03	38
40-54 (Pass)	3.04	1.04	26

¹ where 1="never or almost never", 2="generally not", 3="sometimes", 4="generally", 5="always or almost always" on S.I.L.L. questionnaire, Appendix A

F=4.26 Sig.=.007

Table 4.13 reveals a similar pattern in responses to the strategy, "I plan my **goals** for language learning, for example how proficient I want to become or how I might want to use the language in the long run."

PRESENTATION OF RESULTS

Table 4.13: Analysis of Variance: Goals by Oral Grade

Oral Result	Mean use of Strategy "goals"	Standard Deviation	Cases
70+ (1.1)	4		1
63-69 (2.1)	3.43	1.12	35
55-62 (2.2)	3.05	1.11	38
40-54 (Pass)	2.58	1.33	26

F=2.82 Sig.=.043

Finally, table 4.14 shows the situation with regard to the strategy, "When learning a new German word, I put the word in a sentence".

Table 4.14: Analysis of Variance: Sentence by Oral Grade

Oral Result	Mean use of Strategy "Sentence"	Standard Deviation	Cases
70+ (1.1)	3		1
63-69 (2.1)	2.69	1.18	35
55-62 (2.2)	2.34	1.07	38
40-54 (Pass)	1.88	0.95	26

F=2.84 Sig.=.040

Thus, on the basis of the three statistical techniques employed, Research Question One can be answered in summary form as in table 4.15. In other words, the ten strategies listed, or the "successful" strategies, are strategies identified as being positively associated with levels of oral proficiency for this group of students. Also of note is the fact that, of these ten items, six appear on the first factor identified in the factor analysis and three on the second factor (figure 4.1, pp.130-131). This suggests that besides being used more frequently by more successful learners, these strategies also tend to be used in concert with each other.

Table 4.15: Ten Strategies Associated With Higher Levels of Oral Proficiency

	Strategy (<i>Number on S.I.L.L.</i>)	Strategy Type	Factor Number
1	I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run. (56)	metacognitive	1
2	I plan what I am going to accomplish in language learning each day or week. (57)	metacognitive	1
3	I take responsibility for finding opportunities to practise German. (60)	metacognitive	2
4	I try to notice my language errors and find out the reasons for them. (62)	metacognitive	1
5	I check over what I write in German. (19)	cognitive	1
6	I practise the sound or alphabet of German. (20)	cognitive	6
7	I have a regular language learning partner. (76)	social	1
8	I create associations between new material and what I already know. (1)	memory	2
9	When learning a new German word, I put the word in a sentence. (2)	memory	1
10	I try to relax whenever I feel anxious about using German. (65)	affective	2

It remains to be seen if, as well as using this combination of strategies more frequently, more orally proficient students also use them in a different way than do their less proficient counterparts.

Before addressing this question, however, quantitative analysis of the data set is completed in the following section. Here, the goal is to determine whether any of the background characteristics measured are significantly associated with general strategy use, the use of the ten "successful" strategies just identified or indeed with levels of oral proficiency.

4.3 Research Question Two: *What is the relationship between the learner specific characteristics: age, gender, degree, length of time spent studying German, level, preferred learning style, level of motivation, self-perception of proficiency level and level of enjoyment associated with learning German and a) general strategic behaviour b) the use of the strategies associated with higher levels of oral proficiency and c) higher levels of oral proficiency?*

To begin, the relationships between the learner characteristics and the measures of general strategy use were analysed. Mean scores on variables relating to general strategy use⁵ by gender, level and style were compared using t-tests (Section 3.51). The results indicate that all three of these learner specific characteristics are related to general strategy use albeit in different ways and to varying degrees.

Gender is significantly associated with frequency of use of those strategies contained in factors three and five (see figure 4.1 for complete factor listings). "analysis of German as a system" and "relaxing about and remembering German" respectively (Section 4.3). The results indicate that females use strategies in factor three more frequently than males, with females using an average frequency of fifty six of these strategies and males using fifty one ($t=-2.42$, $df=23.72$, $p=.024$). With regard to factor five, males, however, use these strategies slightly more frequently than do females. They have an average frequency of twenty two compared with the female score of nineteen ($t=2.21$, $df=23.94$, $p=.037$). Gender does not appear to be significantly associated with any other measures of general strategy use.

A student's level, i.e. ex-abinitio or ex-intermediate, appears to influence their use of strategies on factors two, "authentic language use, primarily for communicative purposes", and seven, "making up for gaps in knowledge", as well as influencing the number and frequency of compensatory strategies that they employ. Ex-intermediate students use more of the strategies on factor two more frequently (45) than do ex-abinitios (40) ($t=-2.35$, $df=98$, $p=.02$). On factor seven, however, this trend is

⁵ The concept, general strategic behaviour, was operationalised in the form of the following variables: the total number and frequency of language learning strategies employed, the total frequency scores on factors one to seven, and the total number and frequency of strategies employed within each S.I.L.L. category (Section 3.61).

PRESENTATION OF RESULTS

reversed with the ex-abinitio scoring nineteen and the ex-intermediates seventeen. Not surprisingly, given that factor seven is composed primarily of compensatory strategies, the number and frequency of compensatory strategies employed is also associated with level, with the ex-abinitio using significantly more compensatory strategies more frequently than do the ex-intermediates.

Preferred learning style is also associated with general strategic behaviour particularly with regard to style preferences three, four and five. Each of the aspects of style preference and its association with general strategy use is now reviewed in turn.

The first style preference, described as "holistic/global" versus "focussed/analytical", is associated with factor five, "relaxing about and remembering German". Those students who place themselves closer to the global end of the continuum appear to use strategies on this factor more frequently than do those placing themselves at the analytical end. This style preference is also associated with the number and frequency with which compensatory strategies are employed. Once again, students identifying with the global end of the continuum use more compensatory strategies more frequently (table 4.16):

Table 4.16: Style One by Frequency of Use of Compensatory Strategies

Variable	Number of Cases	Mean	SD	SE of Mean		
Freqcom						
"global"	80	27.825	4.38	.490		
"analytical"	19	25.158	3.64	.835		
t-test for Equality of Means						
	Variiances	t-value	df	2-tail sig	SE of Diff	95% CI for Diff
Equal		2.46	97	.016	1.086	(.511, 4.823)
Unequal		2.75	31.7	.010	.968	(.694, 4.640)

Position with regard to the second style component, "intuitive/random" versus "concrete/sequential/sensing", is associated with the number of metacognitive strategies employed and the frequency with which they are employed. Students identifying with the "concrete" pole use metacognitive strategies slightly more frequently than do those

PRESENTATION OF RESULTS

identifying with the "intuitive" pole. In terms of the number of metacognitive strategies employed, however, this difference amounts on average to a single strategy.

Style preference with regard to the third element, "judging/closure" versus "perceiver/open", appears to be strongly associated with general strategy use. For example, in the case of the total number and frequency of strategies employed, students closer to the "closure" end of the continuum use on average fifty three strategies compared with forty eight strategies ($t=2.53$, $df=98$, $p=.010$). With regard to frequency, the former group achieves a score of two hundred and forty eight with the latter obtaining two hundred and thirty five ($t=2.2$, $df=98$, $p=.025$). Students identifying with "closure" also use more memory-related and metacognitive strategies more frequently than do those identifying with "open". They also use more cognitive strategies as well as using the strategies on factors one, "planning, organising and evaluating learning and revision", and five, "relaxing about and remembering German", more frequently (see for example table 4.17):

Table 4.17: Style Three by Factor One

Variable	Number of Cases	Mean	SD	SE of Mean	
Fac1					
"closure"	37	51.297	9.53	1.567	
"open"	63	46.349	8.77	1.105	
t-test for Equality of Means					
Variiances	t-value	df	2-tail sig	SE of Diff	95% CI for Diff
Equal	2.64	98	.010	1.876	(1.224, 8.672)
Unequal	2.58	70.56	.012	1.918	(1.124, 8.772)

Preferences in relation to the fourth aspect of style, "extroverted" versus "introverted" are also strongly associated with general strategy use. These are related not only to the total number of learning strategies employed but also to the number and frequency of affective and social strategies employed, the total number of metacognitive strategies employed and the frequency with which the strategies on factors two, "authentic language use primarily for communicative purposes", and six, "learning through social interaction in German", are employed. Indeed, students associating themselves more strongly with the extroverted end of this continuum use more strategies more frequently on all of these variables.

PRESENTATION OF RESULTS

Finally, style preferences on the fifth element, "visual" versus "auditory" are associated with the total number and frequency of strategies employed, the number and frequency of cognitive, memory-related, affective and social strategies employed, as well as the total number of metacognitive strategies employed and the frequency with which strategies on factors two, "authentic language use primarily for communicative purposes", and five, "relaxing about and remembering German", are employed. Again, the level of usage is higher for students choosing the "auditory" end of the continuum for all of the variables significantly associated with this element of style.

The possible existence of significant differences in any of the variables relating to general strategy use by any of the remaining background variables was investigated using analyses of variance. The results of these analyses indicate that no apparent relationship exists between age and general strategy use. Similar findings appear with regard to the length of time for which a student has been studying German.

The particular degree for which a student is registered does, however, appear to be associated, albeit to a small extent, with their general use of language learning strategies. For example, the total number of strategies employed varies slightly by degree (Table 4.18). The result in this case is, however, not statistically significant ($p=.171$).

Table 4.18: Total Number of Language Learning Strategies Employed by Degree

Degree Title	Mean Number of Strategies Employed	Standard Deviation	Cases
Applied Languages	51.8	7.28	30
International Marketing and Languages	50.6	9.41	28
International Business and Languages	49.5	10.3	28
Business Studies	48.6	14.5	3
Communications/Journalism	44.3	10.6	4
Applied Computational Linguistics	42	10.2	7
Within groups total	49.74	9.3	100

$$F=1.59 \quad p=.171$$

Slightly more strategies are used by students of Applied Languages, International Marketing and Languages and International Business and Languages in that order. The students of Business Studies and Communications/Journalism appear to use slightly less strategies with students of Applied Computational Linguistics bringing up the rear. These differences are, however, negligible. A further slight difference by degree appears in the use of those strategies categorised as belonging to factor six (table 4.19). This factor is entitled "learning through social interaction in German" and contains the following strategies:

"When talking to a native speaker, I try to let them know if I need help."

"I practice the sound or alphabet of German."

"I ask others to clarify that I have understood or said something correctly."

"I ask others to correct my pronunciation."

Table 4.19: Frequency of Use of Factor Six by Degree

Degree	Mean Frequency of Use	Standard Deviation	Cases
Communications /Journalism	14.8	4	4
Applied Languages	12.6	2.5	30
International Marketing and Languages	12.5	2.2	28
International Business and Languages	12	3.5	28
Business Studies	10	4.4	3
Applied Computational Linguistics	9.7	4	7
Within groups total	239.89	27.76	100

$$F=2.09 \quad p=.073$$

Students of Communications/Journalism, Applied Languages, International Marketing and Languages and International Business and Languages use these strategies more frequently than do students of Business Studies and Applied Computational Linguistics. Once again, however, these results are only approaching statistical significance ($p=.073$, i.e. there is slightly more than a seven percent chance that this pattern is occurring by chance). No other differences in strategy use by degree are apparent.

Finally, the remaining background variables, level of enjoyment associated with learning German, level of motivation to learn the language and own perceived level of oral proficiency display significant positive relationships with almost all of the variables used to measure general strategic behaviour. These include the total number and frequency of strategies employed, as well as the total number and frequency of cognitive and metacognitive strategies employed. For example, table 4.20 shows the relationship between each of these variables and the total number of learning strategies employed.

PRESENTATION OF RESULTS

Table 4.20: Enjoyment, Motivation and Perceived Proficiency Levels, and the Total Number of Learning Strategies Employed

Enjoyment	Strategy Total	Motivation	Strategy Total	Perception of Level	Strategy Total
not at all	31	not very important	40	poor	38.1
not very much	43	fairly important	42.57	fair	47.71
reasonably well	47.45	important	46.92	average	50.82
quite a lot	49.21	very important	51.75	good	53.65
very much	55.48			excellent	70

$F=5.54 p=.001$

$F=3.75 p=.014$

$F=8.12 p=.000$

The higher the levels of enjoyment, motivation and perceived oral proficiency levels, the greater the number of language learning strategies employed. Similarly, table 4.21 shows the relationship between levels of enjoyment and the total number and frequency of cognitive strategies employed,

Table 4.21: Level of Enjoyment and the Use of Cognitive Strategies

Level of Enjoyment	Mean (total cognitive)	Standard Deviation	Mean (frequency cognitive)	Standard Deviation	Number of Cases
Not at all	9		55		1
Not very much	15	3.54	72.2	12.48	5
reasonable	16.94	3.22	80.87	10.55	38
quite a lot	16.65	3.04	76.93	8.02	29
very much	20	2.57	92	9.3	27

$F= 8.37 p=.000$

$F=12.71 p=.000$

Students describing themselves as enjoying learning German "very much" use many more cognitive strategies more frequently than do those who describe themselves as enjoying

PRESENTATION OF RESULTS

German "not at all" or "not very much". A similar pattern emerges with regard to levels of motivation (table 4.22) and own perceptions of proficiency level (table 4.23). For example, in terms of levels of motivation, students who respond to the question "How important is it for you to become proficient in German?" with very important, use considerably more cognitive strategies more frequently than do those who respond with "not very important" or "fairly important". Similarly, students who perceive themselves as being "excellent" or "good" at German use more cognitive strategies more frequently than do those who describe themselves as "poor" or "fair".

Table 4.22: Level of Motivation and the Use of Cognitive Strategies

Level of Motivation	Mean (total cognitive)	Standard Deviation	Mean (frequency cognitive)	Standard Deviation	Number of Cases
Not very important	15		74		1
fairly important	14.29	3.54	72.57	14.2	7
important	16.73	3.22	79.69	11.48	26
very important	18.19	3.04	84.09	11.01	66

$F=3.39 p=.010$

$F= 2.88 p=.040$

Table 4.23: Own Perception of Proficiency Level and the Use of Cognitive Strategies

Perceived Level of Proficiency	Mean (total cognitive)	Standard Deviation	Mean (frequency cognitive)	Standard Deviation	Number of Cases
Poor	14.2	3.79	72.8	14.47	10
Fair	16.43	2.86	78.38	9.89	21
Average	18	3.32	82.36	9.78	45
Good	18.7	2.79	88.13	12.1	23
Excellent	24		97		1

$F= 5.49 p=.001$

$F=4.68 p=.002$

PRESENTATION OF RESULTS

Furthermore, levels of enjoyment and levels of motivation are also significantly associated with the total number of affective strategies employed ($F=3.21$, $df=95$, $p=.02$ and $F=3.04$, $df=96$, $p=.03$) and the frequency with which they are employed ($F=3.87$, $df=95$, $p=.01$, $F=2.57$, $df=96$, $p=.06$). Similarly, higher levels of motivation and perception of oral proficiency are associated with the total number and frequency of both memory-related and social strategies employed. Finally, all three variables are positively associated with the total frequency of strategies employed in factors one and two. Motivation is further associated with the total frequency of strategies employed in factor four and perceived level of proficiency with factor six. These results are presented in summary form in table 4.24:

Table 4.24: Relationships Between Student Specific Variables and General Strategy Use

Background Characteristics	Measures of General Strategy Use Positively Associated with the Characteristics
Age	None
Length of Time Studying German	None
Gender	Factors ² 3, 5
Level	Factors 2, 7, Compensatory Strategies
Degree	Total Strategy Use, Factor 6
Style 1 (<u>global</u> /analytical)	Factor 5, Compensatory Strategies
Style 2 (intuitive/ <u>sensing</u>)	Metacognitive Strategies
Style 3 (<u>closure</u> /open)	Total Strategy Use, Factors 1, 5, , Memory, Metacognitive, Cognitive Strategies
Style 4 (<u>extrovert</u> /introvert)	Total Strategy Use, Factors 2, 6, Affective, Metacognitive Strategies
Style 5 (visual/ <u>auditory</u>)	Total Strategy Use, Factors 2, 5, Cognitive, Metacognitive, Social, Affective, Memory Strategies
Level of Enjoyment associated with learning German	Total Strategy Use, Factors 1, 2, 3, Cognitive, Metacognitive, Affective Strategies
Level of Motivation associated with learning German	Total Strategy Use, Factors 1, 2, 4, Cognitive, Metacognitive, Memory, Social Strategies
Perceived Level of Oral Proficiency in German	Total Strategy Use, Factors 1, 2, 6, Cognitive, Metacognitive, Memory, Social Strategies

²

Factor Reference Key (see figure 4.1 for complete factor listings):

Factor 1: "planning, organising and evaluating learning and revision"

Factor 2: "authentic language use primarily for communicative purposes"

Factor 3: "analysis of German as a system"

Factor 4: "getting the feel of German"

Factor 5: "relaxing about and remembering German"

Factor 6: "learning through social interaction in German"

Factor 7: "making up for gaps in knowledge"

PRESENTATION OF RESULTS

Analysis of the relationships between the background characteristics and the variables measuring general strategy use was followed by analysis of their relationship with frequency of use of the ten "successful" strategies. These results further underline the importance of enjoyment, motivation and self-perception of oral proficiency level.

They indicate that gender is not significantly associated with frequency of use of any of the ten strategies. Level on the other hand is associated with three of the strategies, "I have a regular language learning partner", "When learning a new German word, I put the word in a sentence", and, "I check over what I write". For example, ex-abinitio students check their written work less frequently than do ex-intermediates (table 4.25):

Table 4.25: Check by Level

Variable	Number of Cases	Mean	SD	SE of Mean	
"Check"					
ex-abinitio	21	3.8	.680	.148	
ex-intermediate	79	4.1	.808	.091	
t-test for Equality of Means					
Variances	t-value	df	2-tail sig	SE of Diff	95% CI for Diff
Equal	-1.85	98	.068	.192	(-.737, .027)
Unequal	-2.04	36.51	.048	.174	(-.708, -.003)

They also put words in sentences significantly less frequently than do ex-intermediates (mean = 2.0 compared with 2.5, $t=-1.97$, $df=98$, $p=.05$) and are less likely to have a language learning partner (1.4 and 1.8, $t=-1.87$, $df=98$, $p=.06$).

The components of preferred learning style are also related to the frequency of use of these strategies although the relationships are fewer than in the case of general strategic behaviour. The style component *global/analytic* is related to the strategy, "I try to notice my errors and find out the reasons for them". More analytical students use this strategy more frequently than do those identifying with the global aspect of this style component (means = 4.1 and 3.4, $t=-2.7$, $df=97$, $p=.01$). The second style component is not associated with frequency of use of any of the ten strategies. The third component, on the other hand, is associated with the frequency of use of the following strategies, "I plan

PRESENTATION OF RESULTS

what I am going to accomplish in language learning each day or week", "When learning a new German word, I put the word in a sentence", and, "I have a regular language learning partner". Students associating themselves more with the judging/closure end of the judging/closure versus perceiver/open continuum use all three of these strategies more frequently (means = 2.3 and 1.9, $t=2.03$, $df=98$; 2.7 and 2.2, $t=2.15$, $df=98$; and 2.1 and 1.5 $t=2.69$, $df=98$; $p<.05$). The fourth component of learning style is also associated with frequency of use on three learning strategies. These are, "I associate new material with what I already know", "I take responsibility for finding opportunities to practise German", and finally, "I have a regular language learning partner". As in the case of the third style component, students associating themselves with "extrovert" use these three strategies significantly more frequently than do those identifying themselves with "introvert". For example, in the case of "I associate new material with what I already know", the exact results of the t-test were as follows (table 4.26):

Table 4.26: Associate by Style Four

Variable	Number of Cases	Mean	SD	SE of Mean	
"Associate"					
extrovert	64	3.25	.926	.116	
introvert	36	2.75	1.204	.201	
t-test for Equality of Means					
Variances	t-value	df	2-tail sig	SE of Diff	95% CI for Diff
Equal	2.32	98	.022	.215	(.072, .928)
Unequal	2.16	58.55	.035	.232	(.036, .964)

Finally, the fifth component of style, visual versus auditory, is associated with two strategies, "I take responsibility for finding opportunities to practise German", and, "I try to relax whenever I feel anxious about using German". Here students who prefer to "see any new words they [I] hear written down either in texts or on overheads" use both of these strategies slightly more frequently (means = 3.4 and 2.8, $t=-2.79$, $df=97$, $p=.008$ and 4.0 and 3.4, $t=-2.56$, $df=72.72$, $p=.014$).

Relationships between these strategies and the remaining background characteristics were then investigated using analyses of variance. The findings indicate while age and

PRESENTATION OF RESULTS

length of time studying German have no apparent impact on the use of the ten strategies, degree does play a role, albeit a minor one. For example, the degree being studied appears to influence the frequency with which a student employs the strategy, "I try to relax whenever I feel anxious about using German". In particular (table 4.27), students of Applied Languages and International Business and Languages use this strategy more frequently, this time with the communications students and the journalists bringing up the rear.

Table 4.27: Use of the Strategy "Relax" by Degree

Degree	Frequency of use (mean)	Standard Deviation	Cases
Applied Languages	4	0.8	30
International Business and Languages	3.8	0.8	28
Applied Computational Linguistics	3.4	0.5	7
Business Studies	3.3	1.5	3
International Marketing and Languages	3.2	1.2	28
Communications/Journalism	2.8	1.7	4
Within groups total	49.74	9.3	100

$$F=2.55 P=.033$$

Secondly, it appears that Business Studies students and students of Applied Computational Linguistics use the strategy, "I have a regular language learning partner", more frequently than do students on the other degrees. This result is, however, only approaching statistical significance ($p=.08$). Furthermore, the frequency of use of this strategy was relatively low.

PRESENTATION OF RESULTS

The situation changes dramatically, however, with regard to the variables, level of enjoyment, motivation and perceived level of proficiency. For example, the higher the level of enjoyment, the higher the frequency of strategy use for five of the ten strategies. In the case of level of motivation the number of strategies increases to seven and with regard to perceived level of proficiency reaches eight. Only two strategies appear unaffected by any of these three variables, i.e. "I create associations between new material and what I already know", and "I have a regular language learning partner". The five strategies demonstrating a positive association with all three of the variables are, "I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run", "I take responsibilities for finding opportunities to practise German", "I check over what I write in German", "I try to notice my language errors and find out the reasons for them", and "I try to relax whenever I feel anxious about using German". If we look, for example at the combined ANOVA tables for the first of these strategies, the situation becomes a little clearer.

Table 4.28: Enjoyment, Motivation and Perceived Proficiency Level, and Use of the Strategy "Goals"

Level of Enjoyment	"Goals" (Average frequency)	Level of Motivation	"Goals" (Average frequency)	Perceived Level of Proficiency	"Goals" (Average frequency)
not at all		1 not very important		1 poor	1.9
not very much		2 fairly important	2.29	fair	2.81
reasonably well	2.63	important	2.46	average	3.13
quite a lot	3.28	very important	3.42	good	3.61
very much	3.74			excellent	5

$F=6.40 p=.0001$

$F=7.19 p=.0002$

$F=5.14 p=.0009$

Higher levels of enjoyment, motivation and self-perception of level of oral proficiency, are associated with more frequent use of this strategy. The situation is similar for the

PRESENTATION OF RESULTS

remaining four strategies described in the previous paragraph, with the situation in regard to "I try to notice my language errors and find out the reasons for them" providing a further example (table 4.29):

Table 4.29: Enjoyment, Motivation and Perceived Proficiency Level, and Use of the Strategy "Errors"

Level of Enjoyment	"Errors" (Average frequency)	Level of Motivation	"Errors" (Average frequency)	Perceived Level of Proficiency	"Errors" (Average frequency)
not at all	2	not very important	3	poor	2.7
not very much	1.8	fairly important	2.86	fair	3.29
reasonably well	3.45	important	3.23	average	3.62
quite a lot	3.59	very important	3.67	good	3.78
very much	3.81			excellent	3

F=5.24 p=.001

F=2.15 p=.090

F=2.43 p=.050

Apart from some minor exceptions possibly caused by the small numbers in the extreme categories ("1" and "5"), the general trend that the higher the level of these student specific variables, the greater the frequency of strategy use, is confirmed.

The remaining three strategies, "I practise the sound or alphabet of German", "I plan what I am going to accomplish in language learning each day or week", and "When learning a new German word, I put the word in a sentence" all show a positive association with perceived level of proficiency. The latter two are also positively associated with higher levels of motivation. Thus, the relationships between the learner-specific characteristics measured in this study and the ten strategies identified as being associated with higher levels of oral proficiency can be summarised as follows (table 4.30):

Table 4.30: Relationships Between the Learner-Specific Characteristics and the Ten "Successful Strategies"

Background Characteristics	Strategies Associated With This/These Variable(s)
Age	None
Length of time spent studying German	None
Gender	None
Level (<u>intermediate</u> /abinitio) ¹	I check over what I write in German. (19) I have a regular language learning partner.(76) I check over what I write in German. (19)
Style 1 (<u>global</u> /analytical)	I try to notice my language errors and find out the reasons for them (62)
Style 2 (intuitive/sensing)	None
Style 3 (<u>closure</u> /open)	I plan what I am going to accomplish in language learning each day or week. (57) When learning a new German word, I put the word in a sentence.(2) I have a regular language learning partner.(76)
Style 4 (<u>extrovert</u> /introvert)	I create associations between new material and what I already know. (1) I take responsibility for finding opportunities to practise German.(60) I have a regular language learning partner.(76)
Style 5 (<u>visual</u> /auditory)	I take responsibility for finding opportunities to practise German (60) I try to relax whenever I feel anxious about using German. (65)
Level of Enjoyment associated with learning German	I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run.(56)
Level of Motivation associated with learning German	I plan what I am going to accomplish in language learning each day or week. (57) I take responsibility for finding opportunities to practise German. (60) I try to notice my language errors and find out the reasons for them. (62)
Perceived Level of Oral Proficiency in German	I check over what I write in German. (19) I practise the sound or alphabet of German.(20) When learning a new German word, I put the word in a sentence.(2) I try to relax whenever I feel anxious about using German. (65)
¹	Underlining of pole represents the direction of association.

PRESENTATION OF RESULTS

Finally, in order to complete the picture, the relationship between the background characteristics and level of proficiency was investigated. The results indicate that no relationships exist between oral proficiency and age, gender or the length of time studying German. With regard to level, however, intermediate students, achieve an average of sixty in the oral examination and ex-abinitio fifty five ($t=-3.01$, $df=98$, $p=.010$). In the case of the overall result, which includes the group component, the difference is sixty one compared with fifty six again in favour of the intermediates ($t=-3.01$, $df=98$, $p=.013$). Similarly, in terms of the degree being studied, some minor differences emerged (table 4.31)

Table 4.31: Level of Oral Proficiency (Individual Result) by Degree

Degree	Mean Score	Standard Deviation	Cases
Communications /Journalism	62.5	5.7	4
International Business and Languages	61.8	4.8	28
International Marketing and Languages	58.3	9.9	28
Applied Computational Linguistics	57.7	4	7
Applied Languages	56.9	7.1	30
Business Studies	51	6.08	3
Within groups total	49.74	9.3	100

$$F=2.28 \quad p=.053$$

Students of Communications/Journalism, International Business and Languages and International Marketing and Languages achieved, on average, slightly higher grades. The situation is similar with regard to the group result with the means ranging from fifty one to sixty two, the result this time being significant, ($p=.0003$).

PRESENTATION OF RESULTS

In terms of style, the only component demonstrating a significant relationship with oral proficiency is the fourth component, extroverted/introverted. Here, those identifying themselves with, "I enjoy conversation and role-play with others", achieved on average an individual result of sixty, with those closer to, "I prefer to work alone and concentrate on my own ideas" scoring fifty seven ($t=2.22$, $df=98$, $p=.036$). Furthermore, degree of extroversion is positively associated with two of the components of oral proficiency in particular, i.e. phonetic ability (means = 5.70 and 5.09, $t=2.22$, $df=60$, $p=.030$) and use of idiomatic language (means = 5.92 and 5.32, $t=2.52$, $df=60$, $p=.015$). Similarly, the association between degree of extroversion and fluency approaches significance (means = 6.05 and 5.64, $t=1.69$, $df=60$ $p=.096$). The components "range of vocabulary" and "accuracy" do not, however, appear to be associated with a learners' position on the extrovert/introvert continuum).

Finally, the three components with the highest level of association with oral proficiency are once again level of enjoyment, level of motivation and own perception of proficiency level. These relationships appear regardless of whether analyses of variance or correlations are used. Notable also is the fact that these three background variables, as well as correlating positively with both the individual and final mark achieved by the students, also correlate significantly (using the Pearson correlation coefficient) with each other (table 4.32).

Table 4.32: Intercorrelations between Enjoyment, Motivation, Self-Perception of Proficiency, and Oral Results

	Enjoyment	Motivation	Perception of Proficiency	Individual Result (oral)	Overall Result (oral)
Enjoyment		$r=.3938$ $p=.000$	$r=.4395$ $p=.000$	$r=.4723$ $p=.000$	$r=.4118$ $p=.000$
Motivation	$r=.3938$ $p=.000$		$r=.2776$ $p=.005$	$r=.3344$ $p=.001$	$r=.3692$ $p=.000$
Perceived Level of Proficiency	$r=.4395$ $p=.000$	$r=.2776$ $p=.005$		$r=.4541$ $p=.000$	$r=.5145$ $p=.000$

PRESENTATION OF RESULTS

In conclusion, ten learning strategies associated with higher levels of oral proficiency have been identified. The results relating to the interrelationships between student characteristics and a) their general strategic behaviour, b) their use of the ten strategies and c) their levels of oral proficiency have also been reviewed. The following section moves beyond the statistics in an attempt to determine whether more orally proficient students use the ten "successful" strategies not merely more frequently than their less proficient counterparts but also in a different way.

4.4 Research Question Three: *How are the strategies associated with higher levels of oral proficiency employed by more and less effective language learners?*

Although the participants in the in-depth interviews were categorised into "higher", "middle" and "lower" groupings depending on their results in the oral examinations, this by no means ensures that we are dealing with three homogenous groups. Indeed, as we saw in the analysis of background characteristics (Section 4.3), each group is made up of individuals. What we are looking for in this analysis are, therefore, common patterns within each group. Furthermore, although learners in the "higher" category are cast in the role of "good" language learners, it does not automatically follow that they are "perfect" language learners. There is scope for improvement within this group also.

Bearing the above in mind, this section compares the responses of the more and less proficient students for each of the "successful" strategies, i.e. for each of the ten strategies associated with higher levels of oral proficiency. Responses by the "middle" group are also included for comparative purposes. Firstly, responses to questions concerning the metacognitive strategies, "I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run", and, "I plan what I am going to accomplish in language learning each day or week", are described.

These strategies relate to two distinct areas. The first concerns decisions by the students concerning their long and short-term goals regarding how proficient they would like to become in German. The second concerns how they would like to use the language in the long-run. This area is closely related to students' reasons for putting effort into studying German. This issue was therefore also integrated into the discussion on these strategies.

Responses by those in the "higher" category indicate that they have a long-term goal concerning how proficient they intend to become in German. In the majority of cases, these goals are expressed in relatively general terms such as, "I want to improve and reach a good standard", "I aim for a general high level of proficiency", and, "I want to be fluent in German". Others are more ambitious expressing themselves as follows, "I want

PRESENTATION OF RESULTS

to be as near to perfect as possible", and, "I would like to be fluent by the end of fourth year", while other are more specific and comment that they "...really want to be better at grammar and want to study it well and analyse it".

Many of these students comment, however, that these goals are "at the back of their minds" but they "...don't think of them too often". Furthermore, they do not specify what they mean by "good standard" or "fluent". Instead, the impression is created that, these goals are an underlying, driving force and are thought about explicitly on a relatively infrequent basis.

The influence of these underlying goals on the more proficient group's approach to language learning can be detected in their comments concerning their short-term goals. The goals described are manageable and realistic. They fall into two categories. The first concerns what the students themselves would like to achieve independent of course requirements. The second involves completing in-course tasks and assignments as well as possible.

With regard to the former, this group of students describe, with varying degrees of explicitness, a plan or structure concerning what they would like to achieve in German on a daily, weekly or monthly basis. They state for example "I do want to achieve a certain amount each week", or, "At the start of the year, I plan out what I would like to achieve for each week of the year". This interviewee continues, however, "... I find I can sort of stick to this for about the first four weeks and then it kind of "goes off the rails". Then I make out a new plan, I find I need some sort of plan or structure." This is a further characteristic of this group of students. They are realistic and flexible about their goals as a general rule and are prepared to alter them.

Even those students who do not describe themselves as having a plan appear to have one of which they are unaware. In other words, their responses indicate that they have implicit expectations of themselves and what they should know at certain stages of the year. They make comments which include: "Sometimes I would be writing or saying something and realise that I don't know something and I'd be surprised that I didn't know

PRESENTATION OF RESULTS

it so I'd go back and check it over and work on it. I want to know certain things at the end of each year so as not to keep getting confused by them." In general, though, the short-term goals in this category relate more to skills than to facts. In other words, they were expressed in sentences beginning "I want to be able to..." rather than "I want to know...".

The second category relates to course deadlines. Students comment for example that they have "...really short term goals, like I want this essay to be finished by Friday". Furthermore, they plan not merely that the essay should be completed by Friday but plan "...in terms of how good [they] want an essay to be".

Comparing the above with responses by those in the "lower" category reveals that this group tend to plan neither their short-term nor their long-term goals even at a general level. Where goals are expressed, they appear ill-conceived and half hearted. For example, comments such as the following are frequent, "I just wanted to have a little bit of it [German]" and "I'm just learning it to have German, to be able to read and that. I wanted to have some other language." In other words, an underlying desire for long-term improvement is not expressed. Instead the following comments are representative: "I don't really plan my goals", "I just take it as it comes", "I don't plan my goals. I did hope to be pretty good or "some bit more fluent" by final year." There is also an indication, as in the case of the previous comment, that members of this group feel that there may be no point in planning goals as it may not be possible to achieve them.

In terms of planning goals, the situation with the "middle" category is slightly less clear. Indeed, of the three categories, members of the "middle" category are the most heterogeneous and it is within this category that it is most difficult to detect patterns.

The majority of interviewees in this group do tend, however, to have at least a general goal in mind at the beginning of the year although these tend not to be overly ambitious. For example one of the goals is to become "...fairly good hopefully". Others express more ambitious goals albeit with a disclaimer, "I do want to be extremely fluent but it's something I take one step at a time". Yet others appear a little daunted by the whole

PRESENTATION OF RESULTS

prospect of goals and merely describe themselves as preferring to "take it one step at a time".

Furthermore, while these are the long-term goals for this group, they do not translate into short-term goals. Indeed, the responses create an impression of an expectation that the steps necessary to achieve these goals will be taken out of the students' hands. After stating her general goals, one student comments for example, "I'm hoping that next year will help a lot with understanding in particular and also with conversation."

Returning to the more orally proficient students and how they want to use German in the long run, it becomes clear during the course of the interviews that these students do not yet have a clear idea in their minds of their future careers. Any considerations relating to their long-term use of German concern using the language for authentic communication. Comments are made such as "I want to be able to socialise in German", and "I'd love to be able to have a good conversation in German. Speaking is more important to me, though, than for example being able to write a good letter", and, finally, "I'm motivated by the communication side of things. I get a kick out of going to Germany and being able to communicate with Germans." Further representative comments include, "...of course jobs do also play a role but this does not really apply yet", and, "Long term I would want to use German in my career but I haven't thought about that a lot yet."

Students' long-term views of how they would like to use German generally stretch only as far as how they would like to be able to use German during the year abroad. They are aware of what they will need in terms of a standard of German when living and studying in a German speaking country. For example one states, "I think I need day to day German before going to lectures and concentrating on technical German", while another remarked that, "I think the year abroad and having to be able to deal with everyday situations is a big motivation for learning German." Finally, from a slightly different perspective, a third comments that what makes them work is "...the fear of not being able to communicate with Germans".

The "lower" group, on the other hand, indicate that how they would like to use their German in the future is not really something they had considered to any great extent.

PRESENTATION OF RESULTS

One comment, however, is "I want to travel a lot and go abroad. Otherwise I'd have no reason for learning it. I hadn't thought about careers much."

With regard to the "middle" group, their plans for how they would like to use German do not differ significantly from those of the "higher" group. Once again, careers appear too far in the future to be considered at this stage and there is a definite focus on the year abroad. While the emphasis on the use of German in authentic, communicative situations does not appear as important, these students see themselves speaking German in the future as opposed to writing or reading it.

The primary motivation for putting time and effort into studying German is, for the most proficient group, a liking for the language and a desire to be good at it for its own sake and for themselves. In explaining why they like it, a number describe liking the sound and the feeling of communicating through German. Others are fascinated by the order and structure of what they describe as "a logical language".

For example, comments such as the following were frequent: "I just like German and want to be good at it for myself". "I really do like learning German", "I enjoy speaking it anyway", "I find German very satisfying" as well as "It's the whole satisfaction of getting it right, using conjunctions properly, putting the verb to the end of the sentence and then seeing it there on front of you, perfect. German grammar is very logical and when you get it right it all slots into place and there's a great feeling about it", or, "I like German because it is so concrete and definite. It makes more sense to me. At least you've something to go on", and finally, "I just love the language, I love the sound of the language, I think it just suited me. It really suits me because everything is so ordered. My motivation would be indirectly related to jobs but much more importantly I like German for itself. I also have an interest in history and Germany keeps cropping up in the history books, I know for the wrong reasons but still."

A further striking similarity among this group is their view of German as a living spoken language. All of the intermediates in the "higher" category had spent time in Germany

PRESENTATION OF RESULTS

and intend to return. They describe German as "not just a subject" and appreciate the "whole idea of learning about another culture".

A final observation concerned the importance of both "an interesting class" and progress of others in the class in influencing the desire to improve. Seeing what others can achieve appears to motivate some students. One comments for example that "What others can do also pushes me. I always feel that I can do better." Others view this from a slightly different perspective with one participant making the comment that they "... don't want to be left behind in the class".

In the "lower" category, liking the language for itself once again plays a role with career choice being less important. The liking for German is, however, weaker among this group with one student commenting, for example, that she quite likes German "...but doesn't love it". Furthermore, even those who comment that they like the language find it difficult to formulate reasons as to why. The enjoyment of both structure and the possibility of authentic communication is less apparent. Furthermore, extrinsic factors such as examinations play a more important role for this sub-group as the following comment indicates "I like the language, the exams are also important. But mainly I like the language. As the exams get closer though, they get more important."

Generally, when asked about their motivation for putting effort into German, the "middle" group give a liking for German as a reason. This feeling is not, however, as strong as among the "higher" group with, for example, one interviewee commenting that the language is "not bad". Generally, interviewees do not volunteer much information as to why they like German nor do they describe themselves as motivated by the fact that they were learning a "real" language spoken by "real" people.

The exams and expectations of others play a relatively important role for this group although not for all of the members. Contradictory comments like, "Having to go to Germany is the greatest motivator for me to learn German. Exams aren't really relevant", "I'm not really aiming towards jobs or exams", and, "I work on German in order to be able to improve my work chances", do appear, as well as comments which suggest that

PRESENTATION OF RESULTS

the particular interviewee may be in a transition phase such as, "Last year, I was mainly motivated by exams. This year though I have got more into German and am starting wondering how I would say things in German mainly with the year abroad in mind." Expectations of others are also reflected in such comments as, "Also that we will be back here in fourth year. I'll be expected to be practically fluent when I leave."

The third strategy, also a metacognitive strategy is, "I take responsibility for taking opportunities to practise German". Clear differences emerged concerning whether and how this strategy is used by more and less orally proficient students.

All but two members of the "higher" group engage in activities not directly related to their course requirements. These activities tend to focus in particular on receptive activities. Two students form the exception to this general rule. One describes himself as taking opportunities to practise speaking with German students. This requires some perseverance as the following comment indicates, "I speak German if I meet a German person. I know they're here to speak English, but I'm speaking German!" Another describes how he speaks German with a group of his classmates on an informal basis as follows: "A group of us do speak German casually to each other. You're sort of mimicking German people and being as accurate as possible. It's like a conversation and less repetitive and doesn't get really technical."

The remainder and clear majority, however, favour German television either in SALLU⁶ or at home as a means of practising German outside of class. The preference appears to be for discussions with studio audiences and chat shows. Documentaries on the other hand are described as "a little too technical and you can't really relax while watching them". When watching German television, students in this category concentrate on deciphering meaning and retaining vocabulary that they tend to hear repeatedly. Comments include, for example, "I like hearing the sound and trying to hear how much I can understand", and "...the same vocabulary comes up repeatedly and you notice that you are improving".

⁶ "Semi-Autonomous Language Learning Unit" at Dublin City University. Here students have access to German television, videos, and cassettes and CD-Roms designed to aid language learning.

PRESENTATION OF RESULTS

Finally, two students expressed a preference for reading over listening outside of class. One focuses on a specific interest, i.e. sport and comments, for example, "Say if Ireland is playing a soccer match against Germany, I would check what is written in German newspapers." Another enjoys reading for pleasure in German and stated that she likes "...to read German books. Not academic ones but more popular fiction."

In the "lower" group, three of the four students never use this strategy. When probed, they find it difficult to give reasons why responding for example with comments like, "Not really, I wouldn't be the best at that." In one case, the ex-abinitio language, Spanish, is described as "taking over". One member of the "lower" group, however, does describe how she talks to her sister, a first year student. She describes how they, "have general conversations with each other and go over verbs and tenses orally".

Once again, the middle group has something in common with the category above as well as below it. Two members do not use this strategy at all, with the reason given being one of time pressure. One watches German soap operas but, in contrast with members of the "higher" group, appears unsure as to exactly why. This student states, "I watch German soaps at home. I enjoy listening to German. I'm not sure what I learn from them really. They're easy to understand because you can predict what will be said." A fourth student comments that she attended the German play⁷ and "... thought this was great. It brought German to life. It's nice to see that side of German." Finally, a fifth writes "...out the nominatives and accusatives and stick[s] them up on the wall". This student further expresses her dislike of the "...documentaries and technical things" on in SALLU during the day.

Moving on in this descriptive comparison brings us to the final metacognitive and the first cognitive strategy on the list of ten. These are respectively, "I try to notice my language errors and find out the reasons for them", and, "I check over what I write in German". These tend to be discussed together in the in-depth interviews beginning with the latter and are therefore also dealt with together at this point.

⁷

Annual Production by students/staff, Dublin City University

PRESENTATION OF RESULTS

Students in the "higher" category have very clear opinions as to how they implement these strategies. Firstly, everyone in this category states that they check over what they write, although they differ in the amount of detail they give on the checking process.

Generally, these students check for meaning as they go along, some using a dictionary at this stage and others leaving blanks and returning later, and for grammar errors once they have finished. A number of differences in approach emerged, however, even within this group. For example, a number of respondents say that they do not check written work directly after they have finished it but instead allow some time to elapse in order to be in a position to "...look at it fresh again". Some check their work several times, others only once. Finally, when checking for grammatical errors a number of students begin at the level of cases, adjectival endings, prepositions, pronouns etc., while others focus first on the overall sentence structure and word order.

However, in spite of these differences, all are aware of their own particular approach to checking their work and do not appear to vary it to any great extent. For example, one student describes her checking process as follows, "I handwrite and then type my essays. While I'm typing I check the whole thing again. I check vocabulary and fill in any blanks that I might have left the first time, this time using a dictionary. The first time I do everything I can without a dictionary. Sometimes I then also reformulate sentences and try to improve their structure. I also check for things like endings and umlauts. Sometimes also, once I have the vocabulary, I feel the sentence structure would be better a different way". Other give similar although less detailed accounts, for example, "I read through it really slowly and check genders, adjective endings, spelling mistakes and so on."

The majority of students in this category also express an awareness of their own particular grammatical weaknesses, which provide a focus for their checking process. They make comments such as, "I check commas, because I always forget them", "Unfortunately, I tend to write colloquial German. Then it sounds perfect to me even when it isn't. So I go back and check what needs altering like adjective endings and verbs", "I check over essays and paragraphs that I have written. I generally check over

PRESENTATION OF RESULTS

twice or three times for the grammar and check in particular adjective endings and word order which are a problem for me", or, finally, "I always do this because I always have mistakes with tenses, general verbs, gender of nouns, adjective endings and so on."

In contrast, students in the "lower" category assign very little importance to the use of this strategy unless "something is for a mark". The majority with the exception of two explain that they never check over what they write. Of the two who check, one checks typing errors and comments that he doesn't "...really look at endings or grammar points mainly typing errors", and that he, "wouldn't really go into too much detail". The second replies with, "Sometimes, definitely not always" and explains that he would "...look at word order to see does it look right". He continues, "I look up genders but I find it "just doesn't stick". That puts me off looking things up because I know I won't remember it." A further possible reason for the lack of importance assigned by this group to the checking process is given by the third candidate who comments, "I never really check over what I write. It usually looks right to me anyway. I don't think I'd be able to see what is wrong."

There is, however, as with the "higher" group, a tendency for those in the "middle" category to check over written work, particularly if it is being assessed. Compared with those in the "higher" category, the approach to checking is, however, less structured. Once again, though, the situation in this group is not entirely consistent. with one student, for example, giving a similar answer to those obtained from the most proficient respondents, remarking that she checks paragraph by paragraph and looks at sentence structure, word order and tenses. Less information is, however forthcoming from this group and relatively little enthusiasm shown for this strategy. Again the comment, "I do usually write down what I think is right in the first place though and I wouldn't know if it was wrong", reflects the general opinion.

Moving on to the second error related strategy, the majority of students associate "I try to notice my language errors and find out the reasons for them", with corrected written work returned by their lecturer. However, three members of the "higher" category, associate the strategy with speaking.

PRESENTATION OF RESULTS

In terms of written work, all of those in the "higher" group agree that once they receive corrected written work, a number of the mistakes can be clearly identified as slips that they "could have noticed" themselves, or that arise from "pure carelessness". The second type of mistake is one which is not understood by the student even after it has been corrected. These often relate to grammar rather than vocabulary. A distinguishing characteristic of this group of more orally proficient students is that they attempt to determine the reason for these mistakes. The majority ask the lecturer or look at their notes in the margin. Others prefer to ask class-mates, friends or family. A minority turn to grammar books or their own language notes. Once they have determined the reason for a mistake, a number of them although not all, rewrite the sentence or section either solely for themselves or for their lecturer.

Those in the "lower" category assign little importance to this strategy with the general consensus being that corrections are "right". One comments, "I see the errors but I don't really want to check what they are. I generally accept the grammar correction as being right." An apparent sense of resentment towards the approach whereby a lecturer merely marks a mistake for correction by the student is also evident. For example, the following comment is representative, "It helps when teacher points out reasons for mistakes and doesn't give it to us to correct because we will just forget about it. I don't really have time to look up mistakes. The last thing on your mind is checking over something if you have some project to do. I would do it if I had nothing else to do but it doesn't seem as important."

Those in the "middle" category range from never checking the reason for errors, "I don't really check over corrections that I get back. They're done and gone", to "If it's something I don't know, I would maybe look over old notes sometimes." There is also a suggestion of reliance on the teacher to provide the "correct" answer with students dependent on the "note in the margin" or on going over the mistake in class. One member of this group does however note that repeated mistakes of the same kind would encourage her to "go to a grammar book".

PRESENTATION OF RESULTS

Finally, as we saw above, a minority, three, of the students in the "higher" category also associate this strategy with their spoken language. All three are aware of some of the mistakes they make as they speak. They are, however, concerned at the possibility that further errors are going undetected by themselves, as they notice errors that are not corrected by the lecturer.

One comments, "I would like to be corrected in class when I am speaking. I get all the corrections done on my written work but I find my spoken German has many more errors. I would like to be interrupted and corrected. I've probably been making the same mistakes for years. I'd like to be told what is wrong." The second would also like to be corrected at every point but has developed her own technique for correcting errors she does detect, as is clear from the comment, "If I know I have made a mistake and I am not corrected, then I will later try and find out why I have made this mistake." The third student in this sub-group would like to be corrected after speaking, "When speaking, I like to be corrected when I have finished talking and not continually interrupted. This breaks the flow." In other words, only the second member of this sub-group really attempts to use this strategy to monitor and correct spoken errors themselves. All three, however, would like to teacher to assist in the "noticing" process. None of the members of the middle or lower categories associate this strategy with oral production.

The sixth strategy, is "I practise the sound or alphabet of German". The number of students who do this directly is relatively low. Nevertheless, significant differences emerged by proficiency level.

Six of the students in the "higher" category make use of this strategy. They tend to use one or both of two approaches. These are reading a text aloud and imitating the way native speakers talk. Reading aloud tends to be course work based and a text to be prepared for a future class often provides the material for this exercise. Those students who engage in this exercise describe how they listen to themselves and either concentrate on particular elements such as "*Umlaute*", which they find difficult, or monitor themselves in a more general way to ensure that they "sound German". One comments

PRESENTATION OF RESULTS

for example, "If we have a text to prepare, I would always try to practise reading over it at home. I would read it out loud and listen to myself talking."

Typical of this sub-sample, this student continues, " I also concentrate on how the teacher pronounces words in class". Similarly, a number of them describe how often "in a fun way", they attempt to imitate native German speakers. They comment for example, "I imitate what people on the radio or television say and sometimes repeat it after them" and "...indirectly maybe by imitating Germans but this is more in a fun sense rather than deliberately going to the language laboratory".

None of the students in the "lower" category read aloud at home. Nor do they describe themselves as imitating native speakers. One of the students describes how she tries to think about her pronunciation when reading aloud in class. Another also attempts this in class but finds the time pressure too great to allow him to focus on sound as opposed to content. A third describes how she focuses on sound by listening alone. She states, "I listen to "Linguaphone" at home. I never speak though, I listen to questions and people answering." Finally, the last member of this category is not aware of using this strategy at all.

Members of the "middle" category do speak of imitating their lecturer although this is more passive than active: "Indirectly I think I may imitate my lecturer. I may pick my accent up from her." Unlike the students in the "higher" category, these do not speak of wanting to "sound" German. Instead, they remark that "...generally, you can get by with the German accent unlike French". One student in this category does describe reading aloud, "I read a text to wake me up if I'm tired and can't study. This helps me get used to the different sounds in one sentence or one word." These approaches are not typical of this group, however, with one member unaware of ever using this strategy and a fourth describing how he would talk to himself, "...in German when practising for an oral exam" but, "...never read a text out loud" as they, "...only talk in German for exams".

The seventh strategy, "I have a regular language learning partner", is used particularly infrequently, i.e. by four members of the "higher" category, none of those in the "middle" category and one member of the "lower" category.

PRESENTATION OF RESULTS

Within the "higher" category, two different approaches are taken. One student works together with another on "...projects and most of [our] German homework". She remarks that as they "...are of a similar standard", they work well together. Similarly, a second "...works a lot with two people in [my] class on projects and essays". The others come up with phrases I wouldn't know. We learn from each other then", he continues.

The third and fourth students have a broader interpretation of this strategy, with the third describing how he and a group of his friends "...speak German to each other casually, say for half an hour". Indeed, the approach taken is somewhat reminiscent of that taken by the "higher" category in terms of the previous strategy as the following comment indicates: "You're sort of mimicking German people and trying to get it as accurate as possible." The fourth explains how she speaks German at home with her flat-mate, "...about general things, what we would be saying in English, we just might say in German".

The one student in the "lower" category who uses this strategy works with her sister. She speaks of how they "...have general conversations with each other". They "...also go over verbs and tenses but it's always spoken".

The eighth strategy, "I associate new material with what I already know", is widely used by students although their interpretation of what it implies can vary considerably. For example, in the "higher" group, this strategy tends to be made up of a number of component parts with students using it at a lexical and grammatical level as well as to get an overview of German or to "...see German as a system".

At a lexical level, members of this group break up a word into components: "I break up words to try and identify parts", or, "If I see a word, say in a text, I break it into parts that I know in order to work out the meaning." These "parts" could be either components of a compound noun or the prefixes and suffixes of a verb. Students then attempt to identify any of these parts and use both these and/or the context to make an educated guess as to the meaning of the word. Others attempt to remember the context in which they have seen the word before in order to assist them in determining the

PRESENTATION OF RESULTS

meaning of the word, "If I see a new word in a text, I'd look at it and try and think of where I might have seen it before I look it up." Students in the "middle" and "lower" categories tend not to associate these techniques with this strategy. Two members of the "lower" group do, however, describe splitting compound nouns in order to deduce the meaning. It appears, though that they rely to a greater extent on the dictionary, the lecturer or "others in the group" to identify the word.

Once students in the "higher" category have identified the meaning of the word, they then, depending on the time available, check this word in a dictionary. The next stage is to categorise the word in their minds in terms of words, generally with a similar meaning. A number for example follow the procedure described in the following statements, "Once I have identified it, I would then associate it with other words that I know maybe in sentences so that it makes sense to me", "When I'm learning new vocabulary, I try to fit it into a theme that I have already done and think where you might use the phrase", or, "I would always tend to group vocabulary according to theme and topic." Finally, one comments that this approach, "...helps to attach a new word to a sort of nucleus of words". Interestingly, this approach is also common to students in both the "middle" and "lower" categories whose comment include, "When I learn vocabulary, I think about it in terms of theme" (middle) or "Say you've got a group of words about customs officials or something and then learn a new word about this, you group it with other words that you know" (lower).

A number of students in the "higher" category take this strategy a step further and learn new grammatical points such as a new tense in terms of those that they know already. They comment for example that, when learning a new tense they, "... would compare it with what I [they] already know because often the lecturer would make comparisons with other things". Others remark, in the context of learning grammar that, "...in some ways everything you learn is based on how it is different from something else", while others continue, "...if you already know a number of rules concerning the structure of a sentence or construction of verbs and then learn another one, you will automatically put it in the context of the rules you know already, these things are so closely related anyway". Finally, one member of this group states, "Also in terms of grammar, I tend to

PRESENTATION OF RESULTS

compare and group things, for example the conditional and the future tenses. I would compare their formation when I'm learning them", or, "...for example, learning a new tense, I would have to sort out in my head how it is different from the tenses I have learnt already but I wouldn't really be thinking about this, I would just do it automatically."

Some, however, avoid this approach because they find it confusing as the following comment indicates, "I categorise tenses separately so as not to confuse them", since otherwise, in the words of another student, "...the lines between them get blurred". Others are open to perceiving links but require assistance in identifying them, for example, "I can also see grammar links if they're pointed out to me."

Finally, a minority go even further and attempt to get an overview of German as a system although the majority shy away from this step. Even those who do attempt it are unclear as to exactly what it is that they do. Comments such as the following reflect this uncertainty, "I try to get an overview of German because it's so logical. There's an order and a sequence. It's the whole case system with the adjectival endings and everything."

Despite some inconsistencies in the "higher" group regarding this approach, it is at this point that clear differences between the groups emerge in terms of how this strategy is used. No student in either the "middle" or "lower" categories describes using this approach in terms of learning grammar. Instead, those who actually go as far as to mention this strategy in a grammatical context make comments like, "In terms of grammar I keep the categories strictly separate so as not to get confused between them." Similarly, they do not extend this approach in order to get an overview of German as a system commenting for example that they, "...don't think of "the whole big picture" or "...don't think of German as a whole" because they get confused. In their opinion, "It's easier to concentrate on parts."

In general, students in all three categories, who use this strategy, use it in the context of reading texts both at home and in class. A smaller number, again across all three categories, are prompted to use elements of it on hearing an unknown word. One

PRESENTATION OF RESULTS

comments, for example, "If I'm talking to a native speaker, I try to figure out what I don't understand from what has been said." Those who also use the grammatical component describe how they tend to use it when completing written assignments.

In conclusion, this strategy is considered by students in all three categories to be used by them on a regular basis. It is therefore not surprising that the correlation between it and oral proficiency is one of the weakest of the ten (Section 4.2). The differences in how it is used outweigh the differences in the frequency with which it is used to a particularly large extent.

The penultimate "successful" strategy, "when learning a new German word, I put the word in a sentence", is related to the previous strategy in that it enables the learners to place the new word in a particular context. For example, one of the students in the "higher" category remarks that, "If the lecturer gives us a new word then I think about the context in which I could use this word. If I can't find one, then I look up the dictionary to see what context they would give. I would do this in class and also at home."

Generally, the source of new words in this context is either the teacher or a word looked up by the student for an essay. The "words" in question can be both nouns and verbs. With verbs, in particular, students like to "learn them with their surrounding words" so that they can subsequently use them correctly.

However, quite a number of those in the "higher" category described this approach as "too roundabout". Instead, they either use the contextual examples given by the dictionary in place of their own sentences, or in many cases they would have looked up a word for a sentence anyway. In general, they tend to reserve this strategy for problematic terms, or where they "...had difficulty with the word or the meaning was unclear".

No member of the "lower" category describes themselves as using this strategy to any great extent. Finally, one member of the "middle" category explains how she looks up contextual examples in the dictionary and has looked up the word for a sentence anyway.

PRESENTATION OF RESULTS

A second describes how she uses this approach in order to improve her mastery of verb valency, commenting, "I do put words in sentences to help me remember them, like maybe "handelt von"." The remainder, on the other hand, prefer to avoid this strategy.

Finally, descriptive comparative analysis of different approaches to the implementation of the tenth and final strategy proved particularly fruitful. The strategy, "I try to relax whenever I feel anxious about using German", is the sole representative of the affective strategies.

The majority of those in the "higher" category describe themselves as using this strategy with only three members replying in the negative to questions concerning its use. Their use of the strategy relates most frequently to speaking. More specifically, they associate this strategy with having to "...speak under time pressure". For example, one comments, "This is not as frequent in writing. It's more relaxed then as I can check up what I want to say in my notes or in a dictionary." None of the students in the "higher" category associate this strategy with either reading or listening.

Instead, use of this approach is usually in a classroom situation where they are required to react spontaneously and feel that both the accuracy and fluency as well as content of what they say is being evaluated. For example, in the words of one, "In spoken German, for example when working in a German factory, I kept calm when they gave out and just gave a reply. This is harder in D.C.U. though because you are being evaluated and you have to be accurate as well as get the point across." Another comments that their use of this strategy "...applies more to artificial situations like when you are waiting your turn in class. If someone just speaks to you naturally, you have less time to think about it or to get nervous." Their comments on how they try to relax include, "If I get frustrated with something I want to say, I try and skip over it." "In class I would feel a bit wary speaking. But I try not to worry about this", and, "If I'm on the spot I get nervous so in class I think about what I will say before saying it. I find myself taking deep breaths before I speak."

PRESENTATION OF RESULTS

A minority in the "higher" group also associate this strategy with the preparation of assessments. They comment for example that use of the strategy, "...is mainly project related", and that, "Once you sit down and think them [the projects] through, you can usually make a good attempt..." Similarly, a second comments that they try to relax "...when preparing German assessments such as translations" in that they remind themselves of what they know and "... try to find synonyms, breaking words down and so on". Finally, a third explains that if they "get a block", they try to "...think around it and look for alternatives". In other words, this strategy, when associated with assessments, tends to be associated with the earlier, preparatory stages.

Generally, however, members of the "higher" group do not automatically associate this strategy with examinations, with one offering the following explanation, "It doesn't really apply to oral exams because I like to be well prepared for these. It's more unexpected situations.. ."

It is here that the difference between the groups becomes apparent in terms of the implementation of this strategy. All of those in the "middle" category described themselves as using this strategy but related it primarily to examination situations with comments such as the following being representative, "This applies to learning new grammar in class and particularly when doing our oral presentations. I found that if you get worked up about them you don't even understand what you are saying so you just need to relax and you'll get by", "This applied to my presentation. Sometimes I find the classroom situation very artificial. We could all be speaking English but we're all talking German. I try to forget about this", "This relaxing relates to speaking definitely. It's more related to exam situations I suppose." In other words, use of the strategy by this group is primarily before and during oral examinations.

With regard to the "lower" category, one member describes themselves as never using this strategy. Two relate it primarily to oral examinations as their comments indicate. "I try to relax when speaking by starting a sentence again if I get flustered. This is mainly in class when reading texts or during oral exams and presentations", "I don't like speaking German so I try to relax before and during oral exams." Finally, the fourth member of

PRESENTATION OF RESULTS

this group relates use of the strategy to exams in general commenting that they, "...relax mainly around exams" and "... just take a break and don't get in a panic over it really".

Use of this strategy appears, thus, to be similar across the three groups in that it relates primarily to speaking when under pressure to be both fluent and accurate. This poses a problem for more proficient students when they are required to speak spontaneously in class and relates more to oral examinations for the orally less proficient students.

In conclusion, clear differences emerge in the use of the ten strategies under investigation by those in the "higher", "middle" and "lower" categories. Apart from the fact that the members of the "higher" categories use these strategies more frequently, their responses indicate that they have also developed more extensive and detailed approaches to their implementation.

The following section continues by looking at how each of the "ten" strategies is associated with improvements in different aspects of oral proficiency. The opinions of more proficient students concerning how using these strategies raises their levels of oral proficiency are then reviewed and compared with those of less proficient students.

PRESENTATION OF RESULTS

4.5 Research Question Four: *How do the strategies associated with higher levels of oral proficiency contribute to the development of oral proficiency and how do students perceive them as contributing to this process?*

In order to obtain a deeper insight into the relationship between the ten "successful" strategies and oral proficiency, correlational analyses were conducted between each of these strategies and the different aspects of oral proficiency as described in Section 3.33⁸. The shaded areas in table 4.33 highlight the existence of significant correlations.

Table 4.33: The "Successful" Strategies and the Components of Oral Proficiency

Strategy	Fluency	Accuracy	Vocab.	Pronun..	Idioms
I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run.	r=.4001 p=.001	r=.3483 p=.006	r=.3406 p=.007	r=.1341 p=.299	r=.2463 p=.054
I plan what I am going to accomplish in language learning each day or week	r=.2504 p=.05	r=.2601 p=.041	r=.2294 p=.073	r=.1042 p=.420	r=.1157 p=.370
I take responsibility for finding opportunities to practise German.	r=.4056 p=.001	r=.1429 p=.258	r=.2929 p=.021	r=.1199 p=.353	r=.2768 p=.029
I try to notice my language errors and find out the reasons for them	r=.1890 p=.141	r=.2696 p=.034	r=.2671 p=.036	r=.0942 p=.467	r=.2031 p=.113
I check over what I write in German.	r=.1775 p=.168	r=.2770 p=.029	r=.2442 p=.056	r=.2167 p=.091	r=.1241 p=.337
I practise the sound or alphabet of German.	r=.3157 p=.012	r=.1426 p=.269	r=.2012 p=.117	r=.2417 p=.058	r=.2194 p=.087
I have a regular language learning partner.	r=.0073 p=.955	r=-.044 p=.733	r=.0202 p=.876	r=.0175 p=.893	r=-.126 p=.327
I create associations between new material and what I already know.	r=.3494 p=.005	r=.1039 p=.421	r=.1594 p=.216	r=.2143 p=.094	r=.3476 p=.006
When learning a new German word, I put the word in a sentence.	r=.4006 p=.001	r=.3491 p=.005	r=.2985 p=.018	r=.2951 p=.02	r=.2423 p=.058
I try to relax whenever I feel anxious about using German.	r=.3198 p=.002	r=.4466 p=.000	r=.3228 p=.010	r=.2747 p=.031	r=.4180 p=.001

⁸ Scores on all components of oral proficiency were not available for all students as it proved impossible for the researcher to be present at all of the examinations and the collection of such data was solely for research purposes. Complete data sets on the constituent components of proficiency were, however, available for 69 students, i.e. 69% of the sample.

PRESENTATION OF RESULTS

The pattern indicates that several of the strategies, the "focused" strategies, contribute to improvements in different aspects of proficiency with a smaller number of strategies, the "broad spectrum" strategies, associated with improvements in all or almost all of the constituents of oral proficiency measured in this experiment. For example, the strategies, "I try to relax whenever I feel anxious about using German", and, "When learning a new German word, I put the word in a sentence", fall into the latter category.

Qualitatively, in terms of the strategies, "I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run", and, "I plan what I am going to accomplish in language learning each day or week", members of the orally most proficient group comment that long-term goals drive their progress and motivate them. Their short-term goals, on the other hand, allow them to monitor this progress and take corrective action where necessary. For example, one student comments, "I like to see how I'm improving. I think about my goals particularly when I feel I haven't learnt anything in the last month or so. I think about my goals then and what I have to do in order to get somewhere."

Members of the "higher" category, however, do not express clear opinions as to why. "I try to relax whenever I feel anxious about using German", is useful. Comments such as this strategy "...worked really well" and "When I relaxed I felt better" are the norm.

The strategy, "When learning a new German word, I put the word in a sentence", is described as a "memory" strategy. In the opinion of the "higher" group, it assists them in remembering nouns or verbs. Comments include, "This helps me remember how to use these verbs. It's pure memory", "I think this helps me remember the word. I forget a word out of context and find it easier to remember a sentence", "I would learn them [verbs] from their surrounding words so that I could use them", "This helps me remember the word. I don't like learning lists of words like we did at school. I found I used to forget the words by the end of the next week. You had no reason to remember them."

PRESENTATION OF RESULTS

Perceptions of the second memory strategy, "I create associations between new material and what I already know", are somewhat similar. Students view this strategy primarily as a way of remembering vocabulary, including both nouns and verbs. This is indicated by the following comments, "I think you have a better chance of remembering a word if you use this method rather than looking it up straight away in a dictionary", and "It helps to improve my vocabulary." A number of students also perceive this strategy as a way of both acquiring new material and simultaneously revising material previously learnt. They describe the strategy as "a form of revision". Furthermore, a third sub-group view it as a way of analysing the structure and format of German words, once again primarily as an aid to vocabulary acquisition. Finally, a number also indicate that use of this strategy helps them to come to terms with the German language as a whole and the ways in which different aspects of the language system relate to each other. They comment, for example, "It makes German more ordered", "I find it easier to remember [a new tense] if I relate it to a tense that I know. Coming across new material, in any circumstances really, causes me to do this", and "It also helps with overall structure and remembering prepositions and where they fit in overall."

The third strategy on the list of ten, a metacognitive strategy, "I take responsibility for finding opportunities to practise German", is reminiscent of the first two in this discussion in that it stimulates the use of other strategies. The majority of students associate this strategy with speaking German either to their class-mates or to native speakers of German. Some also associate it with watching German television and reading. Looking at this strategy in conjunction with the strategies, "I practise the sound or alphabet of German", and, "I have a regular language learning partner", both of which also tended to be associated with the production of output, reveals some interesting patterns.

All of the students in the "higher" group are in agreement that speaking German, either to native speakers or to class-mates, helps their "overall fluency", as well as improving their German accent. In the words of one, "...it definitely helps my accent. You're more inclined to slip into the accent automatically."

PRESENTATION OF RESULTS

Speaking aloud in class is also described as useful in that it "makes you conscious of the sounds you make". It is not necessary for the class to be focused on accent, however, with one student commenting, "Anything I have to say aloud helps this. For example, last week we had to construct sentences in the passive in German and say them aloud. This makes you conscious of the sounds you make."

They also remark that the speaking process shows them most clearly what it is that they don't know. These gaps in their knowledge relate primarily to vocabulary but also concern grammatical structures and word order. For example, the following comments are representative, "It [speaking] also shows me gaps in what I know. This tends to be more vocabulary at the moment. I don't use difficult structures when I am speaking", "You also realise grammar points that you are missing and think about your word order and genders and so on. You might think that you have got a grip of a certain grammar point but when you are talking to others in German you realise that you are not totally sure", and finally "I sometimes notice that I can't really finish a sentence. I'd be stuck on a grammar point, I'm not sure of the structure. I also notice that I'm missing vocabulary." It appears that a realisation of this form is an excellent motivator for the students to fill this particular "gap" in their knowledge. In the words of one "you go to say something and find you don't know what it is. There's more motivation to learn it."

A minority also mention that speaking German improves their accuracy. For example, one comments, "I have German friends who speak German to me. They correct every single mistake I make which I like. This helps me improve my spoken German", while another remarks "The person I am talking to sometimes reformulates a sentence and I can see that it is better."

A significant group also states that speaking German improves their overall "feel" for the language. After speaking German for a while they find themselves thinking in German and/or notice that the language flows more automatically for them. One is of the following opinion, "I talk German with a friend of mine. When we have done this a lot, sometimes I even find myself thinking in German. Even though my language is not perfect, there is more of a flow after speaking together for a while and the word order

PRESENTATION OF RESULTS

starts to become more automatic and natural." Another feels that, "You get an ear for the language, getting used to the language even though you don't realise it."

Finally, it is also remarked upon that speaking increases your confidence in your ability to speak German and the process is as a result "less intimidating". This comment relates in particular to speaking to a class-mate as opposed to a native speaker. A number of students find that this helps them "...to remember material and keep it fresh". Others use this opportunity to "...try out new nouns and phrases". A number also find that speaking to someone provides them with a source of information and ask both class-mates and native speakers for vocabulary and/or to be corrected. As one pointed out, the students, "... all know different words".

Furthermore, as we saw above (Section 4.4), the remaining two approaches to "taking responsibility for finding opportunities to practise German" involve watching German television and reading. In terms of watching television, students stress the fact that they are relaxed and can concentrate on "getting the gist" of what is happening and identifying vocabulary without having to answer specific questions. One comments, "You just sit there and try to pick up as much as you can. Not like in class trying to understand", while another continues that "...the same vocabulary comes up repeatedly and you notice that you are improving". In terms of reading, one student remarks that this, "...helps you pick up sentence structures and vocabulary almost unconsciously".

The next grouping of strategies on the list of ten concern checking written work and finding out the reason for errors. The more proficient students describe this as helping them to recognise what they are doing wrongly and to be aware of their mistakes. The majority in this group speak of the futility of simply continuing to hand up the same mistakes to their lecturer. One remarks, "Otherwise you just keep using the wrong thing all of the time. Once you learn it wrong that's it." Further comments such as the following are representative: "This [checking written work] helps you recognise your weaknesses and your mistakes and not leave this to your lecturer. You're more aware of what you're doing wrong", "It makes you a lot more accurate", and, "This helps my German a lot rather than just handing it up and getting it back marked a week later." A

PRESENTATION OF RESULTS

number of these students feel that checking what they write is a form of revision for them and some of what they themselves recognise as being incorrect will be remembered. In the words of one, "Each time I check, it reminds me how to do it (for example cases). It's like revision."

Some orally proficient students express less positive opinions of the value of finding out the reasons for their errors. As we saw in the previous section, this strategy was primarily associated with corrections on written work received back from the lecturer. One comments for example that this was less valuable than studying grammar. She states, "Correcting corrections doesn't help very much really. The errors are generally due to word order and this improves slowly over a long period of time. I'd probably forget it again though and the same thing would happen. I learn more by actually studying grammar." Others, however, disagree and feel that finding out the reason for errors prevents them reoccurring in the future and that this process consolidates what has perhaps already been learnt and helps commit the information to memory. Comments such as the following illustrate this point, "It's important to understand the rules so that you don't make the same mistake in the future", "...grammar points finally click [when doing corrections]. It makes everything sink in", and "I think it is then that I remember something most, when I get it wrong, from corrections."

The opinions expressed by the "lower" and "middle" groups are, in general, somewhat different. For example, the metacognitive strategies involving setting long and short term goals tend either not to be used by these groups or where they are used, no clear views are expressed as to their function. The third strategy, relating to relaxing when feeling anxious about using German, is mainly perceived by those in the "middle" and "lower" categories as being useful in exam situations. In the words of one, referring to giving oral presentations, it helps, "...at the actual moment really. It pulls you out of the hole and shows you know you've made a mistake", or, "This strategy helps during the exam...this helps me speak better at the particular time."

In terms of putting words in sentences, members of the "middle" and "lower" groups are of the view that this would aid in vocabulary acquisition commenting, for example, that

PRESENTATION OF RESULTS

they "...would probably remember these words if I [they] keep going over and over them for an essay", or more simply, "This helps me remember the words." Similarly, the strategy involving associating new with previously learned material is viewed primarily as an aid to vocabulary acquisition. One member of the "middle" group, however, comments that it, "...helps improve grammar and vocabulary". Members of the "lower" category comment that it helps in remembering new words and revising existing information.

In terms of producing output, members of the "lower" group comment on how speaking German helps in improving fluency and pronunciation, drawing attention to gaps in vocabulary and grammar ("...vocabulary mainly not really structures. If it's a difficult structure I don't use it anyway"), and improving comprehension as well as providing an opportunity to "try out new words and phrases and ask if they are right". In terms of aural work, one member of the "lower" category comments that this "... reinforces what you know".

Finally, in terms of checking written work and finding out the reasons for errors, members of the "middle" and "lower" groupings, as well as being relatively unenthusiastic about the use of these strategies (Section 4.4), are also unconvinced of their value. The main issue for them is that even if they used these strategies, they would not remember "the new word" or correction of a particular grammar point.

In conclusion, having presented the results of the primary research, the following chapter evaluates these findings and interprets them in the light of current thinking in this and related fields.

Chapter Five

Discussion and Evaluation

Overview

This chapter discusses the results presented in the previous chapter. The significance of these findings is then analysed in the light of similar studies conducted. Finally, directions for future research and implications for classroom practice are considered.

5.1 Discussion

5.11 Introduction

The following section discusses in more detail the results presented in the previous chapter. It is also designed to "integrate" these results in order to obtain a more comprehensive picture of the processes at work when students attempt to acquire oral proficiency and teachers attempt to facilitate this process. This integration is achieved by viewing each of the findings not in isolation but in the context of the complete set of findings obtained by this study.

Thus, the section begins by reviewing the trends and patterns which emerged in the data. These relate primarily to the general strategic behaviour displayed by the sample. The strategic behaviour identified as being associated with higher levels of oral proficiency, is then considered. The background characteristics associated with higher levels of general strategic behaviour, the strategies associated with higher levels of oral proficiency and higher levels of oral proficiency are then analysed in the light of the above. This analysis provides a more complete picture of the complex network of interrelationships between all of these variables.

The qualitative findings obtained during the in-depth interviews are then reviewed. These provide important supplementary information that adds depth to the quantitative framework developed as described above. For example, the qualitative findings help to confirm the quantitative information concerning the ten "successful" strategies, in that verbal confirmation was provided that the orally more proficient students do actually use these strategies significantly more frequently than do the less proficient students. The findings also indicate a higher level of oral proficiency in their mother tongue on the part of the orally more proficient participants.

The qualitative findings also help to contextualise the quantitative information concerning the ten strategies identified as being associated with higher levels of oral proficiency. In other words, they provide valuable insights into the contexts and ways in

DISCUSSION AND EVALUATION

which these are employed by more and less successful learners as well as into the types of external stimuli that encourage their use. Furthermore, in some cases, information obtained relating to certain strategies, in particular the setting of goals, adds further dimensions to the quantitative data obtained concerning, for example, students' levels of motivation. Finally, the qualitative data provides insights into students' understanding of the ways in which strategic activity facilitates the process of proficiency development and in particular their language learning process. These perceptions are again associated with their general levels of motivation, their perceptions of their own levels of proficiency in German and the possibility of raising them and, in particular, their reasons for either employing or avoiding the use of language learning strategies.

The following section goes on to discuss each of the above areas in some depth, the goal being to provide a more comprehensive picture of the process by which oral proficiency is developed. It is only with such an understanding of the process that it will be possible to consider the instructional implications of the research findings (Chapter Six).

5.12 Presentation, Contextualisation and Evaluation

In terms of general trends and patterns, preliminary analysis of the quantitative data indicates that significant differences in strategy use and proficiency levels are displayed by this sample. Differences in strategy use relate to the number and type of strategies employed as well as to the frequency with which they are implemented.

In general, there is an emphasis on cognitive, metacognitive and social strategies with compensatory strategies also being used relatively frequently. Memory-related and affective strategies are employed to a lesser extent. These findings are supported by the factor analysis, with cognitive, metacognitive and social strategies dominating on the more heavily weighted factors.

The results further indicate that orally more proficient students use more language learning strategies more frequently than do orally less proficient students. Furthermore, they also use more of particular strategy types more frequently, the strategy types being

DISCUSSION AND EVALUATION

cognitive and metacognitive. The orally more proficient students also use the combinations of strategies on factors one, "planning, organising and evaluating learning and revision", two, "authentic language use primarily for communicative purposes", and most likely three, "analysis of German as a system", and six, "learning through social interaction in German", more frequently. These factors are composed predominantly of metacognitive, cognitive and social strategies. Thus, as well as using these strategy types more frequently as a group, it also appears that within the sample it is the orally more proficient students who are using these strategies to the greatest extent. This finding indicates the importance of reflecting on and monitoring the learning process, as well as of active mental engagement, facilitating manipulation and transformation of the learning materials and, finally, of the importance of interacting with others in the process of proficiency development.

The next important finding is that ten individual strategies are significantly associated with higher levels of oral proficiency (table 4.15, Section 4.2)¹. Furthermore, the results of the factor analysis provide initial indications that many of these strategies tend to be used in conjunction with one another. In other words, this combination of strategies constitutes an initial strategic profile of the successful oral communicator in German.

Interestingly, despite the emphasis in the previous section on the metacognitive, cognitive and social strategies, this list contains representatives of all of the strategy types with the exception of the compensatory strategies. This suggests perhaps that affective and memory-related strategies are more effective when used in conjunction with strategies from other category types. Thus, the combination indicates that the profile of the orally proficient student is that of an "all-rounder" who, nevertheless, assigns particular importance to metacognitive strategies.

The importance attached to metacognitive strategies is not entirely unexpected if we cast a glance outside the area of language learning strategies to key studies reported on in the literature of educational psychology. For example, as early as 1916, Binet and Simon

¹ Interestingly, nine of the ten strategies are not necessarily directly associated with speaking. This further underlines the artificial nature of the division of language ability into abilities to read, write, listen and speak (see also Introduction and Section 4.1).

DISCUSSION AND EVALUATION

stress the importance of metacognition in intellectual functioning. Seventy years later, Sternberg (1986) emphasises the importance of metacognitive learning, the theory of which developed in parallel with his theory of human intelligence. According to these theories, metacognition can be broken down into metacognitive knowledge and metacognitive skills. The former refers to, for example, a student's beliefs concerning the functioning of his or her cognitive system. However, access to declarative knowledge of this nature facilitates but does not guarantee appropriate learning or problem solving behaviour. The latter depends on a student's capacity to regulate his or her own learning, a capacity demonstrated by members of the "higher" category in their frequent use of such strategies as planning their long and short-term goals.

The quantitative findings also indicate that members of the "higher" category actively seek to achieve these goals by, for example, looking for opportunities to practise German. Furthermore, the fourth metacognitive strategy on the list of ten and the first cognitive strategy both suggest an awareness of the possibility of errors occurring and indicate attempts to avoid such errors and a desire to learn from them when they do occur. The sixth strategy may involve interaction through German, something which is particularly obvious in the seventh.

Finally, despite the low level of importance attributed to the memory-related and affective strategies, in terms of the association of these strategy types with higher levels of proficiency, individual examples do appear on this list of ten. These are "I create associations between new material and what I already know", "When learning a new German word, I put the word in a sentence", and, "I try to relax whenever I feel anxious about using German". Indeed, the inclusion of, for example, "I create associations..." is not altogether surprising in the light of the discussion in Section 1.23. Here, we discussed the view of the cognitive theorists that material is stored in the declarative memory in the form of "cognitive units" or "propositional representations". This approach emphasises the importance of the association of new with previously learned material. Furthermore, the strategy, "I try to relax..." could perhaps be viewed in terms of Krashen's affective filter (although as we have seen (Section 1.22), its existence remains disputed). According to this theory, if a learner is overly anxious, language

DISCUSSION AND EVALUATION

acquisition may not take place. More generally speaking, a definition of emotion in educational psychology is the "physiological and psychological responses that influence perception, learning and performance" (Murray, 1964).

However, it is important to reiterate at this point that a statistical measure of association, such as a correlation, does not necessarily infer a causal relationship between the variables. In other words, a correlation between a particular strategy and oral proficiency does not necessarily mean that using this strategy increases oral proficiency. For example, it is possible that orally more proficient students find it easier to use a particular strategy and as a result use it more frequently. In other words, use of the strategy may result from rather than cause increases in proficiency. It is further possible that a third factor is playing a role. For example, an orally proficient student may be highly motivated. This high level of motivation may encourage the use of a particular strategy (Sections 2.24, 2.3, 2.253).

As, however, with many of the correlational relationships in this research, it is most likely that the relationship between strategies and proficiency levels are bi-directional. For example, a correlation between putting words in sentences and oral proficiency may imply that students who have already reached a certain level of proficiency tend to do this. This then increases their proficiency level thus in turn further encouraging the use of this strategy. However, given the array of factors which can influence the rate at which acquisition occurs and the extent to which language learning strategies are employed (Section 2.24), such an interpretation of a correlation between a language learning strategy and oral proficiency necessarily contains an element of simplification. However, despite this drawback, this interpretation permits modelling of the relationship and allows it to be represented diagrammatically as follows:

Figure 5.1: A Bi-Directional Relationship Between "When learning a new German word, I put the word in a sentence" and Oral Proficiency



DISCUSSION AND EVALUATION

It is, however, impossible to tell from a measure of association whether the strength of the relationship is stronger in one direction than in the other. For instance, in terms of the above example, the correlation does not tell us whether the impact of proficiency level on the likelihood of the strategy being used is greater or less than the impact of the strategy on proficiency level. Indeed, it would appear that the strength of directional association is strategy, context and learner dependent.

The next and final set of quantitative results relates to the relationship between the background characteristics displayed by members of the sample and three variables, the first being general strategic behaviour, the second the use of the ten strategies associated with higher levels of oral proficiency and the third, levels of oral proficiency.

The findings indicate that age and length of time spent studying German are associated neither with strategic behaviour nor with frequency of use of the ten strategies associated with higher levels of oral proficiency. These variables also fail to demonstrate any significant relationship with levels of oral proficiency.

However, given the relatively small range of ages in this sample, the findings relating to age are not unexpected. Ages range from seventeen to thirty nine with an average age of twenty and a standard deviation from the mean of 2.65. Furthermore, if the two outliers aged thirty nine and thirty four were to be removed from the sample, the remaining ninety eight percent are aged between eighteen and twenty two. It is, therefore, unlikely that the differences in learning approaches between children and adults, which have been observed by some researchers (*for example Ehrman and Oxford, 1995, Section 2.24*) would appear in this data.

The fact that no relationship exists between the length of time that the students have been studying German is slightly more surprising. However, on the other hand, differences of one year arising from whether or not intermediates repeated their Leaving Certificate examinations, opted for transition year courses or took a year or more of German at primary level will not necessarily have a significant impact on either their current approach to learning German or their proficiency levels.

DISCUSSION AND EVALUATION

However, classifying the participants more broadly according to whether they are beginners or intermediates and ignoring differences of one or two years does reveal some interesting patterns. For example, whether a student is ex-abinitio or ex-intermediate correlates with the number of compensatory strategies employed, with ex-abinitios using significantly more of them more frequently. This is not entirely unexpected, given that compensatory strategies are designed to "compensate" for deficiencies in knowledge, of which ex-abinitios are likely to have more than ex-intermediates. This argument is supported by the fact that ex-intermediates have a higher average score in the oral examination (sixty) than do the ex-abinitios (fifty-five). Ex-intermediates, on the other hand, use more authentic communicative strategies, as indicated by their average frequency score of forty five on factor two, "authentic language use primarily for communicative purposes", compared with a score of forty for the ex-abinitios (Section 4.3). Furthermore, the level at which students find themselves is also associated with frequency of use of the ten "successful" strategies, with ex-intermediates using three of the ten strategies more frequently than ex-abinitios. The three strategies in question are, "I check over what I write in German", "When learning a new German word, I put the word in a sentence", and, "I have a regular language learning partner".

Thus, ex-intermediate students appear slightly more adept in terms of strategy implementation. This may be the result of several factors including the fact that they have on average a higher level of proficiency and perhaps as a result have less need to focus to such an extent on compensatory strategies. They also received strategy training in the first year of their degree (Section 3.3). This took the form of an assessed language learning diary as well as strategy training embedded in their classroom exercises. While the ex-abinitio students also received strategy training, there was less emphasis on this aspect of their course, the training tended to be more "implicit" and they were not required to complete a language learning diary. However, it should be noted that, with the exception of the students studying Applied Computational Linguistics and Business Studies, the ex-abinitio students did complete a language learning diary in their second European language (Section 3.3).

DISCUSSION AND EVALUATION

Discussions relating to the impact of previous strategy training are, however, hampered by the fact that students may have engaged in strategy training at primary or secondary level (Section 3.3) and/or while participating in language courses outside of the university or perhaps "learning to learn" courses held within the university. Furthermore, as we have seen (Section 3.3), some of this training may have been implicit. This makes it almost impossible to accurately measure the variable "previous strategy training". As a result, sweeping generalisations concerning the impact of the previous strategy training of which we are aware cannot be made.

The degree programme is also associated with general strategic behaviour, but to a relatively minor extent. Students on certain degrees such as Applied Languages and International Marketing and Languages tend to use more strategies. They also, together with the students of Communications and Journalism use more of the strategies associated with social interaction included in factor six, "learning through social interaction in German". This effect is, however, relatively small and statistically insignificant. Choice of degree is, however, also associated with frequency of use of two of the ten "successful" strategies, "I try to relax whenever I feel anxious about using German", and, "I have a regular language learning partner". Applied Languages students and students of International Business and Languages use the first strategy more frequently. The same applies to students of Business Studies and Applied Computational Linguistics with regard to the second. These differences may be the result of different personality types, with a tendency to prefer particular learning styles, applying for particular degrees. Such explanations must, however, be regarded as tentative given the number of potential factors involved, the relative weakness of the correlations and the relatively small numbers of students of Business Studies and Applied Computational Linguistics participating in the study. Furthermore, in contrast with the majority of studies that have compared strategic behaviour across degrees (*e.g. Oxford and Nyikos, 1989, Section 2.24*), the vast majority of students in this sample are reading for a degree which could be loosely classified under the heading "humanities". It is possible that the inclusion of students taking more "scientific" degrees would have altered the findings. Finally, the differences may also be partially due to the fact that the students on these various degrees display different mean levels of oral proficiency with the

DISCUSSION AND EVALUATION

Communications/Journalism students and the International Business and Languages students displaying the highest mean level of proficiency while students of Business Studies and Applied Computational Linguistics achieved slightly below average results (Section 4.1). There are also different numbers of ex-abinitio and ex-intermediates within each degree grouping in the sample, a factor which, in light of the discussion in the previous paragraphs, may also be influencing the results.

Gender is associated with general strategic behaviour, but to a relatively minor extent. For example, analysing frequency of factor use by gender indicates that females use strategies associated with analysing German as a system more frequently (factor three), while males favour relaxing about and remembering German (factor five). Gender, on the other hand, is unrelated to either the frequency of use of the ten strategies associated with higher levels of oral proficiency or oral proficiency levels themselves. The relatively small number of males in the sample (eighteen percent) does mean, however, that some patterns may not be apparent from an analysis of this data set.

Moving from the demographic to the personality related variables, the various components of the construct "preferred learning style" demonstrate several associations with general strategic behaviour, the ten strategies and levels of oral proficiency. For example, global/analytic preferences are related to the use of compensatory strategies as well as to the use of those contained in the factor "relaxing about and remembering German". Here, those associating themselves with the "global" end of the "global/analytic" continuum use these strategies more frequently. In other words, they appear drawn to the compensatory, affective and memory-related strategies. With regard to the ten strategies, a relationship also exists between this style component and the strategy, "I try to notice my language errors and find out the reasons for them". This time, however, the relationship is in the opposite direction, with more analytical students using this metacognitive strategy more frequently. Style preferences on this component are, however, not associated with levels of oral proficiency.

The intuitive/concrete element is associated with the frequency of use of metacognitive strategies. In this case, students associating themselves with the "concrete" pole use

DISCUSSION AND EVALUATION

metacognitive strategies more frequently. The difference is, however, minimal and this element is not associated with either frequency of use of any of the ten strategies or with levels of oral proficiency.

The strongest associations with strategic behaviour can, however, be identified on the closure/open, introverted/extroverted and visual/auditory components. Here, pole preferences are significantly associated with strategy use on all of the strategy categories with the exception of the compensatory strategies. For example, students identifying with "closure" use more strategies more frequently. They also use more memory-related, metacognitive and cognitive strategies as well as using the strategies on factors one, "planning, organising and evaluating learning and revision" and five, "relaxing about and remembering German", more frequently². This element of preferred learning style is also associated with frequency of use of three of the ten learning strategies. These are, "I plan what I am going to accomplish in language learning each day or week", "When learning a new German word, I put the word in a sentence", and, "I have a regular language learning partner". Once again, students associating themselves with the "closure" end of the continuum use these strategies more frequently. This preference is, however, not associated with levels of oral proficiency.

Similarly, students associating themselves with the extroverted end of the "introvert/extrovert" continuum use more learning strategies in general and more affective, social and metacognitive strategies in particular. They also use the strategies on factors two, "authentic language use primarily for communicative purposes", and six, "learning through social interaction in German", more frequently. This component "extrovert/introvert" also demonstrates significant correlations with, "I create associations between new material with what I already know", "I take responsibility for finding opportunities to practise German", and, "I have a regular language learning partner". Here "extroverts" use all of these strategies more frequently. Finally, the style component extroverted/introverted is also the only one of the five to be associated with levels of oral proficiency, with extroverts achieving, on average, a higher score of sixty

² Interestingly, as we see here, where a learning style preference for one pole correlates with increased use of one strategy type, other significant strategy correlations with this style component all tend to be in the same direction. In other words, a strategy preference which increases overall strategy use tends to be associated with an increase in strategy use on several categories.

DISCUSSION AND EVALUATION

as opposed to fifty-seven for more introverted students (Section 4.3). Furthermore, with regard to the individual aspects of oral proficiency, more extroverted learners use more idiomatic language and are phonetically superior. It is also likely that they are more fluent. In terms of accuracy and range of vocabulary, however, they do not appear to have an advantage.

Finally, analysis of the findings concerning the style component, "visual/auditory" reveals that students preferring aural work use more strategies more frequently as well as using all of the strategy categories with the exception of the compensatory strategies more frequently. They also use the strategies on factors two, "authentic language use primarily for communicative purposes", and five, "relaxing about and remembering German", more frequently. This element is further associated with, "I take responsibility for finding opportunities to practise German", and, "I try to relax whenever I feel anxious about using German". These strategies are used more frequently by more visually oriented students. It is interesting to note at this point that while students associating themselves with the "auditory" end of the visual/auditory continuum use more affective strategies more frequently, it is those associating themselves with the "visual" end of the continuum who use the affective strategy, "I try to relax whenever I feel anxious about using German more frequently". This underlines the importance of conducting research at the level of individual strategies as well as that of strategy types.

Thus, it is clear that those with particular learning styles are predisposed to use more learning strategies more frequently as well as more of particular strategy types. Furthermore, students with certain style preferences also use some of the ten strategies associated with higher levels of proficiency more frequently. However, the fact that only one style component "extrovert/introvert" correlates with level of proficiency demonstrates the complexity of the situation regarding learning style preferences. For example, students identifying with the analytical end of the global/analytical continuum use the strategy, "I try to notice my language errors and find out the reason for them" more frequently. However, those associating themselves with the intuitive pole tend to use metacognitive strategies slightly less frequently in general. Thus, in theory, a student identifying with closure, introvert, auditory, intuitive and analytic may not use the

DISCUSSION AND EVALUATION

metacognitive strategy, "I try to notice my language errors and find out the reason for them", more frequently as the style preferences may balance each other out.

Furthermore, a vast range of permutations and combinations of style types may exist. There is also the possibility that other, as yet unidentified, style components are also playing a role (*Ehrman and Oxford, 1995:69, Section 2.1*). Thirdly, previous strategy training may have been successful in encouraging some students to use strategies alien to their natural learning style (Section 2.1). Therefore, sweeping statements based on the data concerning the relationship between preferred learning style and strategic behaviour should be avoided. We can, however, go as far as to say that preferred learning style influences students' predispositions towards strategy use. In particular, the results of this study indicate that the more extroverted personality types in the sample use more affective, social and metacognitive strategies, and more of the ten strategies associated with higher levels of proficiency. They also achieve higher levels of oral proficiency.

Finally, and most importantly, higher levels of motivation to learn the language, enjoyment of (learning) the language, and perception of one's own proficiency level in the language are associated with increased strategy use on a considerable number of the variables measuring strategic behaviour. These include the total number and frequency of strategies employed, and the number and frequency of strategies employed on all of the S.I.L.L. categories with the exception of the compensatory strategies. Furthermore, levels of enjoyment and motivation, and own perceived level of proficiency are also positively associated with eight of the ten "successful" strategies. Five of the strategies correlate with all three of these characteristics. Two, "I plan what I am going to accomplish in language learning each day or week", and, "When learning a new German word, I put the word in a sentence", correlate with perceived level of proficiency and levels of enjoyment associated with learning German. One, "I practise the sound or alphabet of German", is significantly associated only with perceived levels of proficiency.

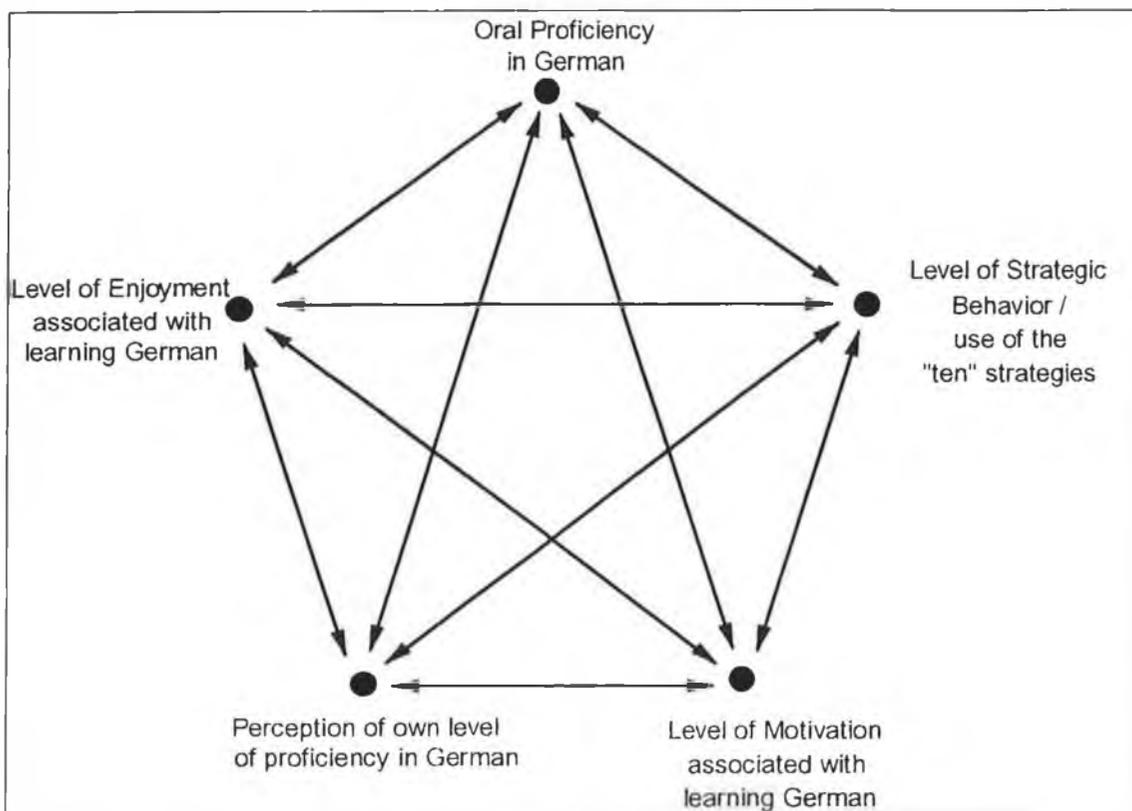
The exceptions, which correlate with none of these characteristics, are "I have a regular language learning partner" and "I create associations between new material and what I already know". The fact that these strategies do not correlate with the background

DISCUSSION AND EVALUATION

characteristics in question may result from the fact that these strategies are somewhat unusual in the context of the ten. For example, "I have a regular language learning partner" is employed by a very small number of students, thus reducing the reliability of the statistical analyses associated with this strategy. Indeed, this argument may also apply to the strategy, "I practise the sound or alphabet of German". Secondly, the association between, "I create associations between new material and what I already know", and levels of oral proficiency is relatively weak. This may be due to differing interpretations of what it means to use this strategy across the proficiency level groupings (Section 4.4). For example, members of the "lower" category describe themselves as using this strategy at a lexical level only. In contrast, for members of the "higher" group, the strategy is used on both lexical and syntactical levels as well as to get an overview of how German operates as a system.

Thus, given that level of enjoyment associated with learning German, level of motivation and perceived proficiency levels also correlate strongly with each other, we can assume that the three characteristics in question are significantly positively associated with levels of strategy use in general as well as with use of the repertoire of successful strategies. These three characteristics also show a significant positive relationship with oral proficiency levels (see also Boekaerts (1991) and MacIntyre, Noels and Clement (1997), Section 3.31 on the relationship between a student's perception of their level of proficiency and their actual proficiency level).

Therefore, taking all of the background characteristics into account, it is possible to conclude that "level", associations with the extroverted pole of the "introvert/extrovert" continuum, level of motivation, level of enjoyment associated with learning German and own perception of proficiency level are significantly, positively associated with both increased levels of general strategy use as well as with increased use of the ten "successful" strategies. These are in turn associated with higher levels of proficiency. Removing "level" and tendencies towards extroversion from the equation and focusing on those variables that are to some extent, amenable to instructional influence, figure 5.2 presents a graphic representation of this complex network of bi-directional interrelationships:

Figure 5.2: "Star Diagram" of the Relationships Between the Five Key Variables

The qualitative findings add important supplementary information to this initial framework in that they help to contextualise the quantitative information. In other words, they provide information on the contexts and ways in which the ten strategies are used and in some cases on the types of materials and tasks which encourage their use.

Furthermore, the fact that the qualitative interviews confirm that more orally proficient students do actually use some or all of the ten "successful" strategies is significant in itself in that it supports the quantitative findings. In other words, the fact that the more orally proficient students reiterated that they used at least the majority of the ten "successful" strategies and were able to describe in some depth how they use these strategies suggests that they were not merely checking strategies at random while completing the questionnaire. A similar argument can be applied to the fact that the less proficient students describe themselves as not, or at least rarely, implementing these strategies. Thus, the qualitative material assists in the validation of the quantitative data.

DISCUSSION AND EVALUATION

Secondly, the interviewer's overall impression of each in-depth interview was recorded after each interview. In this case, the "overall impression" constitutes the interviewer's assessment of participants' willingness and ability to describe their language learning process, the degree to which they employ specialist vocabulary and their overall willingness and ability to communicate orally in their mother tongue. Analysing these "impressions" reveals that the students who are more proficient in German are more comfortable talking about their language learning process. In general they give longer answers to the questions posed, in some cases using specialist terms to describe the language learning process and in other paraphrasing these in their own words. Orally more proficient students also required significantly less prompting during the in-depth interviews. They tended not to give monosyllabic answers and were more in control of the interview situation than were their orally less proficient counterparts.

Although a subjective and relatively crude measurement, a number of tentative conclusions can be drawn from the "overall impression" variable. Firstly, it appears that orally more proficient students are more aware of and have reflected to a greater degree on the language learning process. In other words, they display a higher level of metacognitive awareness. In some cases, they also possess more of the vocabulary required to describe (or at least helpful in describing) the language learning process.

It is possible that these students are, in general, more comfortable with oral communication regardless of whether it be in their mother tongue or through a foreign language. This possibility is supported by the fact that several of the components involved in speech production appear to be language independent (Section 1.1). It is also in line with the "interdependence hypothesis" formulated by Cummins (1991). This states that ability in two languages is closely related in an academic context. Examples quoted in favour of this hypothesis include a study by Skutnabb-Kangas and Toukoma (1976) which showed a significant correlation between Finnish and Swedish verbal academic proficiency in Finnish speaking children in Sweden. Indeed, Cook (1992:575) concludes that "there seem to be strong links between L1 ability and L2 classroom success".

DISCUSSION AND EVALUATION

Furthermore, the definition of an extrovert as someone who is "willing to speak and interact" (Section 2.1) is also language independent (see also measures of extroversion used in this research (Appendix B)). Indeed, in this study degree of extroversion is positively associated with both levels of strategic behaviour and levels of oral proficiency. Thus "articulacy" in the mother tongue may be a further factor influencing level of oral proficiency in a foreign language. It appears also that "extroversion" may influence particular aspects of proficiency, i.e. use of idiomatic language, fluency and phonetic quality. Given, however, that the interview focused on one specialist, "academic" topic, conclusions cannot be drawn concerning relationships in general between oral proficiency in the mother tongue and ability to communicate orally through German without further research.

The quantitative findings also indicate that orally more proficient students, as well as actually using the ten "successful" strategies more frequently, also have a more structured approach to their implementation. They interpret the strategies in a broader manner than do members of the lower categories, i.e. they apply them more effectively to a wider range of situations. They also have a clearer idea of what it is that they are doing as they use each strategy and why.

Indeed, it is likely that many of the intra-group differences which emerged concerning implementation and interpretation of the strategies may be partially explained by the fact that students in the "higher" category are driven by underlying long and short-term goals relating to self-improvement. These goals appear to be both flexible and realistic (Section 4.4). Furthermore, from their descriptions of how these strategies assist in the language learning process (Section 4.5), it appears that the more proficient students use these goals, in particular the short-term goals, to monitor their learning. While some members of the "lower" groups also have goals, these tend to be poorly formulated, less ambitious and more examination oriented. They also fail to translate into concrete short-term goals.

Closely associated with their goals in the in-depth interviews, are the participants' reasons for putting effort into studying German. The findings indicate that orally more proficient students are driven primarily by a liking for the language and a personal desire

DISCUSSION AND EVALUATION

to be able to communicate in authentic situations as well as by wanting to succeed in their examinations. Less proficient students do not express the same liking for the language and are driven more by a desire not to fail examinations. Thus, it appears that, in terms of Gardner and Lambert's theory of motivational orientation (*discussed for example in Wen, 1997:235*), the orally more proficient students are closer to the "integrative" end of the "integrative"/"instrumental" motivational continuum. Thus, not only can we conclude that orally more proficient students display higher levels of motivation, we can also conclude that they display higher levels of integrative motivation.

There is also a suggestion by members of the "lower" category that there is no point in having goals as it is unlikely that they will be able to achieve them. This point is related, perhaps, to the association detected between level of strategic behaviour and own perception of proficiency level, in that the students' comments indicate that, not only do members of the "lower" category, perhaps correctly, perceive themselves as having a lower level of proficiency, they appear to perceive their proficiency level as being fixed or something over which they can exercise little or no control. Thus, in contrast with the views of members of the "higher" category, improvement through effort is not viewed by them as a feasible option.

Students' comments on the remaining strategies also indicate that, as well as ensuring that they get an opportunity to produce output on a frequent basis, members of the "higher" category make a particular effort to consistently expose themselves to quality input from a variety of sources. Furthermore, members of this category often choose a source of input which they enjoy and which is related to a particular personal interest. Their approach to checking and error correction is also highly developed and orally more proficient students tend to have developed a series of steps according to which they check their work at both a syntactical and lexical level. In many cases, these approaches incorporate an awareness of their own weaknesses. In all of the above, members of the "higher" category differentiate themselves from members of the "middle" and "lower" categories. In particular, the "lower" category has much less regard for checking and error correction, stemming perhaps from a lack of confidence in their own ability to

DISCUSSION AND EVALUATION

identify mistakes. Once again, the relationship between strategic behaviour and own perception of proficiency level comes to mind.

Unusually, "creating associations", primarily associated with receptive activities, is considered by students in all three categories to be used by them on a regular basis. It is, therefore, not surprising that the correlation between this strategy and oral proficiency is one of the weakest of the ten ($r=.1919$, $p=.056$, Section 4.2). However, the qualitative analysis suggests that the differences in how it is used outweigh the differences in the frequency with which it is used. Orally more proficient students regard it, as with almost all of the strategies, as incorporating a series of stages and elements. For example, students in all three categories, attempt to remember words by grouping them according to a theme. Preliminary identification of meaning from context or from familiar elements within an unknown word, however, tends to be used more frequently by more proficient students. Furthermore, use of the strategy on a broader level in the learning of tenses and grammatical elements as well as in coming to terms with the "whole German language" appears, in particular, to be the differentiating factor between the proficiency levels. Thus, orally more proficient students, in particular, use this strategy to create their own propositional networks and eventually schemata (Section 2.24).

Use of the final strategy, relaxing when feeling anxious about using German, appears to be similar across the three groups in that it relates primarily to speaking when under pressure to be both fluent and accurate. This poses a problem for more proficient students when they are required to speak spontaneously in class and have not had an opportunity to prepare in advance. It relates less to examination situations when they feel themselves to be prepared. The strategy relates, however, more to oral examinations, indeed to examinations in general, for the less orally proficient students.

Finally, the quantitative analysis suggests that some of the ten "successful" strategies are "broad spectrum" strategies contributing to improvements in several aspects of a student's proficiency (Section 4.5). Others are more focused and relate to one specific element of proficiency. Thus, these findings suggest a link between the use of a portfolio of broad based and specific focused strategies such as the combination of ten presented

DISCUSSION AND EVALUATION

here, and higher levels of oral proficiency, defined as it is in this dissertation as "...a learner's global ability to communicate fluently, accurately and appropriately in authentic or authentic-like situations relevant to their course objectives (Introduction, see also Section 2.253).

Comments by members of the "higher" group concerning how the use of the "successful" strategies contributes to the development of proficiency correspond broadly to the correlations which emerged in the quantitative analysis between the frequency of use of these strategies and the components of oral proficiency measured in this study (table 4.16, Section 4.5). However, it may be the case that their comments on this topic are made up of a combination of personal observations concerning the value of a particular strategy in the development of proficiency and how they believe a particular strategy should logically assist in this process. In support of this argument is the fact that students appear to attribute the "obvious" function(s) to a strategy. They fail to mention, or perhaps to be aware of, the more subtle ways in which use of the strategy may support the language learning process. Indeed, with regard to certain strategies whose functions are less clear, even members of the "higher" group, while verbalising their belief that the strategy is of value, are unable to describe how it contributes to the process of foreign language acquisition.

For example, members of the "higher" group appear to have relatively few problems describing functions of the first two metacognitive strategies, "I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run", and, "I plan what I am going to accomplish in language learning each day or week". As discussed in the previous section, they perceive these goals as an underlying source of motivation as well as a means of monitoring progress and taking corrective action where necessary.

Similarly, these students have little difficulty attributing functions to the strategies, "I try to notice my language errors and find out the reason for them", and, "I check over what I write in German", with widespread agreement that these strategies improve accuracy by making students aware of their weaknesses and mistakes and by encouraging revision

and updating of existing knowledge. Again, these comments on the part of the students concerning the association of these strategies with improvements in accuracy correspond to the quantitative findings (Section 4.5).

Responses concerning, "I take responsibility for finding opportunities to practise German", suggest that students find it easier to determine the impact on the process of language acquisition of productive as opposed to receptive activities. For example, those for whom this strategy implies speaking German believe that this assists their German in several ways³. These include helping fluency and accent as well as pointing out to them what it is that they don't know, in particular vocabulary that they are missing. They also describe speaking as improving their accuracy, their "feel" for the language and their confidence in speaking. Receptive activities such as watching German television are perceived as primarily assisting the process of vocabulary acquisition. A minority see such activities as improving sentence structure.

Interestingly, however, with the strategy, "When learning a new German word, I put the word in a sentence", students recognise only the way in which this strategy facilitates the acquisition of vocabulary. The quantitative data, in contrast, suggests that it is also strongly associated with fluency and accuracy. A similar situation exists in terms of student opinion concerning the second memory-related strategy, "I create associations between new material and what I already know", with students failing to recognise the association between this strategy and improvements in fluency.

Finally, the situation with regard to the third broad spectrum strategy, "I try to relax whenever I feel anxious about using German", is more ambiguous. The quantitative analysis indicates that this strategy is positively associated with all aspects of oral proficiency. However, even the most orally proficient students are unable to give a reason as to why it assists the language learning process. They merely comment that it helps performance at the particular time. In other words, although they cannot verbalise its effects, they recognise and observe the impact of this strategy.

³ At this point in the in-depth interviews, students also related speaking German to the strategies, "I practise the sound or alphabet of German", and, "I have a regular language learning partner". These comments, therefore, can also be applied to these strategies.

Comments made by those in the "middle" and "lower" categories reflect the fact that in many cases, they do not use the strategies in question (Section 4.4). Even in cases where they describe themselves as employing particular strategies, they tend to express no clear view as to their value. Indeed, members of both of these groups appear particularly uncomfortable answering questions concerning how strategies assist in the language learning process and many were confused by such questions. Answers such as, "I don't know how this helps really, it's just my way of learning" ("I create associations between new material and what I already know"), and, "It helps fluency I suppose" (I practise the sound or alphabet of German"), are frequent.

Where responses concerning the value of the use of the ten strategies are forthcoming, they concern almost exclusively the most obvious or expected functions of particular strategies. The emphasis is, in general, on how a strategy aids in the process of vocabulary acquisition. Members of these groups also describe how speaking aids the development of fluency and improves pronunciation.

Thus, it appears that members of the "higher" category can generally determine at least some of the ways in which the use of a particular strategy aids the development of proficiency. Even in cases where they cannot verbalise how a strategy is of value, their underlying belief that it is useful appears to be enough to ensure its continued use. Members of the "middle" and "lower" categories are less convinced of the potential value of strategic behaviour.

5.13 Conclusion

Thus, in conclusion, synthesising the results of the primary research indicates that the strategic profile of the successful oral communicator is that of someone who uses a relatively large quantity of language learning strategies and in particular of cognitive, metacognitive and social strategies. Most importantly, he/she uses an array of strategies of different types in conjunction with each other.

DISCUSSION AND EVALUATION

Most significant within this strategic repertoire are the metacognitive strategies. In concrete terms, these translate into long and short-term goals which both motivate the student to use other language learning strategies and provide them with a means of monitoring their language learning process. These strategies are also closely associated with students' level and type of motivation, and with their reasons for studying German.

The remaining strategies in the orally proficient student's repertoire are drawn from the cognitive, social, affective and memory-related categories. They involve these students taking responsibility for finding opportunities to improve their German. This means exposing themselves to quality input from German media on a regular basis and interacting where possible through German. The orally more proficient students also combine an ability to distance themselves from the language learning process in order to be able to review their emotional reactions to it, with a talent for detailed linguistic analysis at a close textual level. Finally, they monitor their production for errors, determining the reason for these when they do occur and taking steps to prevent their re-occurrence.

Successful learners employ these strategies effectively and apply them in a structured manner to a broad range of situations. They are also explicitly aware of and comfortable describing orally each strategy that they use. They also have an underlying belief that using the strategies contributes to the process of foreign language acquisition.

Finally, successful oral communicators in German enjoy German for its own sake and have a positive view of their own level of oral proficiency in the language, as well as a positive attitude towards their ability to improve. In terms of preferred learning style they tend towards extroversion.

Less successful learners, in contrast, fall at the "metacognitive hurdle" and are lacking both the motivation required to use as many language learning strategies as the more proficient students as well as the means to regulate the language learning process. They tend to have a smaller number of strategies at their disposal and to employ those they do use in a less structured manner and in more "obvious" situations. Finally, they have more

DISCUSSION AND EVALUATION

difficulty describing the strategies they employ and are unconvinced of the value of these strategies in the process of foreign language acquisition. Their levels of enjoyment associated with learning German and their levels of motivation are lower, as is their opinion of their own proficiency level. They also have a lack of belief in their ability to improve.

5.2 Comparison With Existing Studies and Directions for Future Research

5.21 Introduction

Comparison across studies in the field of language learning strategies is complicated by a number of factors (see also Section 2.253). These include the existence of several different strategy classifications and assessment techniques, the use of contextualised definitions of oral proficiency and the fact that researchers have been investigating the situation with regard to a range of languages, particularly English, which have been taught using different approaches in a variety of cultural settings. In addition, some of the learners in the studies reviewed are foreign language learners while others are second language learners.

However, in spite of this, a number of tentative conclusions are beginning to emerge in this field. The findings obtained by this study can be viewed as confirming many of these while rejecting others. Thus even though, for example, different tools are being used in different settings, certain tendencies keep pushing themselves through.

The findings relate primarily to relationships between general strategic behaviour and proficiency levels, the individual strategies associated with higher levels of proficiency and the ways in which these strategies are implemented by more successful students (Section 5.22). They also concern relationships between the use of language learning strategies and the background characteristics displayed by the sample (Section 5.23). Finally, the situation regarding the contribution of language learning strategies to the acquisition process is discussed in Section 5.24.

5.22 Learning Strategies and Oral Proficiency

The findings obtained by this study support arguments that a higher level of strategy use is associated with higher levels of oral proficiency, at least in German. Secondly, they substantiate claims that more effective learners use more of particular strategy types and, in particular, more metacognitive, cognitive and social strategies. They also indicate that

DISCUSSION AND EVALUATION

the orally more proficient student uses a wider range of different types of strategies. Within this repertoire, the metacognitive strategies play a particularly important role. Finally, the successful learner applies the strategies they employ to a wider range of situations than does the less successful learner. They also employ these strategies in a more structured and purposeful manner. Each of the above findings is now discussed in turn in the light of those obtained by similar studies.

The discovery that the orally more proficient student uses more language learning strategies is a particularly significant one. This is owing to the fact that much current research on language learning strategies has failed to show the relationship between the quantity of language learning strategies employed and proficiency levels (*see for example Park, 1997:216, Section 2.252*).

Secondly, the results indicate that the successful language learner uses a larger quantity of particular strategy types than does the less successful learner. More specifically, the more orally proficient students in this study use more metacognitive, cognitive and social strategies.

This contrasts with Pratt's (1995) discovery that the more proficient participants in her study use fewer cognitive and metacognitive strategies. However, a series of studies support the conclusion that a significant positive relationship exists between the number and/or frequency of strategies employed in at least one of the three categories listed above, and levels of proficiency.

For example, Politzer and McGroarty (1985) discovered that, in their study, the level of social interaction was related to increases in oral communicative ability. Similarly, Huang and van Naerssen (1987) claim that a relationship exists between the number of functional strategies employed and levels of proficiency, with functional strategies containing primarily those which could, in terms of the S.I.L.L., be categorised as either social or cognitive.

DISCUSSION AND EVALUATION

Chang (1990) also found a positive relationship between the number of social strategies employed and levels of oral proficiency. Oxford and Ehrman (1995) discovered a relationship between the use of cognitive strategies and levels of oral proficiency, with Purpura (1997) concluding that the use of metacognitive strategies encourages the use of cognitive strategies, which in turn have a positive impact on test performance. Finally, Park (1997) discovered a significant relationship between the total number of strategies employed in each of the S.I.L.L. categories and levels of oral proficiency. Furthermore, in Park's study the association is stronger between levels of proficiency and the total number of social and cognitive strategies employed (see also Section 2.252).

The study also identified ten individual strategies (listed below for convenience, table 4.15) as being associated with higher levels of oral proficiency. Of these ten strategies, four are metacognitive in nature, two cognitive, two memory-related, one social and one affective.

The discovery that this combination of ten strategies is associated with higher levels of proficiency, supports some of the work done on identifying the learning approaches of the "good language learner" (Section 2.251). For example, many of these studies emphasise the demonstration of metacognitive awareness on the part of these students (for example R. Ellis, 1994a; Chamot, Kupper and Impink-Hernandez, 1988a,b). They also describe the successful learner as someone who employs a greater range of strategies to the tasks under investigation (R. Ellis (1994a).

Furthermore, Rubin (1975) describes the good language learner as someone who focuses on form by looking for patterns (parallel with strategy eight), takes advantage of all practice opportunities (parallels with strategy three) and monitors his or her own speech and that of others (parallels with strategies one and two).

Similarly Naiman, Frohlich and Todesco (1975) list six strategies of good language learners. These include seeing language both as a rule system (strategies four and five) and a communicative tool (strategies three and seven), extending and revising ones

understanding of the language (strategies one and two) and addressing the affective demands of language learning (strategy ten).

Table 4.15: The Ten Strategies Associated With Higher Levels of Oral Proficiency

	Strategy	Strategy Type
1	I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run.	metacognitive
2	I plan what I am going to accomplish in language learning each day or week.	metacognitive
3	I take responsibilities for finding opportunities to practise German.	metacognitive
4	I try to notice my language errors and find out the reasons for them	metacognitive
5	I check over what I write in German.	cognitive
6	I practise the sound or alphabet of German.	cognitive
7	I have a regular language learning partner.	social
8	I create associations between new material and what I already know.	memory
9	When learning a new German word, I put the word in a sentence.	memory
10	I try to relax whenever I feel anxious about using German.	affective

Parallels with the primary findings relating to the ten successful strategies are less easy to find in the findings obtained by the correlational studies (Section 2.252). However, some similarities do emerge.

These relate primarily to the relationship between the use of social strategies and oral proficiency. For example, Huang and van Naerssen (1987) report that their orally more proficient students use "thinking or talking to self in English", "speaking with other students, teachers and native speakers", and "participation in group oral communicative activities", significantly more frequently than do less effective communicators. Pratts

(1995) discovered that her orally more proficient students use the strategies "repeating" and "receiving and sending messages" more frequently.

As in this study, differences are also reported in how the strategies are used by more and less effective learners. This is particularly true of the "good language learner" studies (Section 2.251) which tend to be more qualitative in nature.

For example, Chamot and Kupper (1989) conclude that more successful students use strategies "...more often, more appropriately, with greater variety and in ways that helped them complete the task successfully". They also state that effective learners are more purposeful in their approach to a task and monitor both their comprehension and their production for meaning (*see also O'Malley, Chamot and Kupper, 1989*).

Furthermore, Corbeil (1990) concludes that successful and less successful language learners differ in terms of how they deal with error correction. As in this study, she concludes that better students expend more effort, become more engaged with their material and treat the correction more positively than do less successful students. In other words, they perceive it as supporting their personal learning process rather than reflecting negatively on their ability.

Thus, the differentiation of strategy use as described by the high achievers in this study seems to be a factor that works across settings. However, as relatively few studies have been conducted on the implementation of individual strategies, particularly in language other than English, generalisations must be treated with caution.

5.23 Background Characteristics, Learning Strategies and Proficiency Levels

The findings in this study relating to the relationship between the background characteristics measured and general strategic behaviour (presented in Section 4.3 and discussed in Section 5.12) support some of those obtained in previous studies (described in Sections 2.1 and 2.24) while failing to support others. The findings relating to each

DISCUSSION AND EVALUATION

background characteristics are considered below in the light of those obtained by similar studies.

The analysis begins with the demographic characteristics: age, number of years spent studying German, level, degree and gender. It then moves on to consider the situation regarding the personality-related characteristics: preferred learning style, levels of motivation, self-perception of proficiency level and level of enjoyment associated with learning German. Generally, however, many of the secondary studies do not go as far as to determine whether or not a relationship also exists between these background characteristics and levels of proficiency. Comparisons cannot therefore always be made concerning these relationships.

Firstly, the findings obtained by this study indicate that no relationship exists between the age of a student and either their level of strategic behaviour or their level of oral proficiency. Relatively few studies have actually been designed to explore the impact of age on strategic behaviour. However, those that have been conducted (*e.g. Ehrman and Oxford, 1995*) suggest that younger learners often use a more natural approach while older learners rely to a greater extent on formal classroom techniques. They also discovered that younger learners are more likely to gain fluency while older learners have an advantage in understanding the grammatical system. Possible reasons for this failure of this study to detect relationships between, for example, age and either levels of strategic behaviour or of oral proficiency are discussed in the previous section. They include the relatively small range of ages displayed by the sample.

Similarly, the variable "length of time spent studying German" does not correlate with any aspects of strategic behaviour or with levels of oral proficiency. Comparison with similar studies is, however, difficult in the case of this variable. This is owing to the fact that the majority of studies investigate possible differences in strategic behaviour by level rather than by the number of years studied. Those that do, tend to be longitudinal rather than cross-sectional studies looking at changes in strategic behaviour over time (*e.g. Nyikos, 1987*).

DISCUSSION AND EVALUATION

In this study, the variable "level", i.e. ex-abinitio (approximately two years of German) or ex-intermediate (approximately seven years of German), does appear to influence both strategic behaviour and levels of oral proficiency. For example, ex-intermediate students use more of the strategies on factor two, "authentic language use primarily for communicative purposes" with ex-abinitio students using more compensatory strategies. This finding is in line with Oxford and Nyikos's (1989:295-296) discovery that foreign language students who had studied the language for a minimum of four or five years used communication-oriented strategies more often than did less experienced students⁴.

The findings also indicate that a relationship exists between a fourth demographic variable, degree, and strategic behaviour. They suggest, for example, that students reading for certain degrees, including the B.A. in Communications and the B.A. in International Marketing and Languages use strategies on the factor, "learning through social interaction in German", more frequently than do, for example, students of Applied Computational Linguistics. These results are, however, only approaching statistical significance. Comparison with other studies is once again difficult in terms of this variable. The majority of studies look at the impact of "career orientation" or "field of specialisation" on strategic behaviour. Under such a classification, all of the degrees contained in this study could probably be subsumed under the heading "humanities/social science/education" (e.g. Politzer and McGroarty, 1985).

Finally, the fifth demographic variable, gender, influences strategic behaviour in that females use more of the cognitive strategies in factor three, "analysis of German as a system", more frequently. Males, on the other hand, use more of the affective and memory-related strategies contained in factor five, "relaxing about and remembering German". These findings do not support the assumption that females make greater use of strategies than do males (e.g. Oxford and Nyikos, 1989:295; Ehrman and Oxford, 1995). The lack of a relationship between gender and proficiency level is, however, widely supported (Green and Oxford, 1995:290).

⁴ However, in the case of "level", it is difficult to determine whether it is the extent of exposure to different types of strategy training, number of years spent learning German, level of proficiency, an as yet unidentified factor or factors, or indeed a combination of all four that is/are, in reality correlating with strategic behaviour. Controlling for at least some of these factors in future studies could help clarify these issues.

DISCUSSION AND EVALUATION

Moving on to look at the personality-related variables, the situation is as follows: As we have seen, the variable, preferred learning style, is made up of five components. Each of these appears to be associated, at least to some extent, with strategic behaviour.

For example, with regard to the global/analytic component, learners associating themselves with the "global" end of the continuum appear drawn to the compensatory, affective and memory-related strategies. The intuitive/concrete element, on the other hand, is associated with the frequency of use of metacognitive strategies. In this case, students associating themselves with the "concrete" pole use metacognitive strategies more frequently. The difference is, however, minimal. The conclusion in Chapter Two that intuitives tend to favour compensatory and affective strategies (*Ehrman and Oxford, 1989, 1990*) is, therefore, not supported by these findings .

The strongest associations with strategic behaviour can, however, be identified on the closure/open (or judging/perceiver) component. Here, pole preferences are significantly associated with strategy use on all of the strategy categories with the exception of the compensatory strategies. For example, students identifying with "closure" use more strategies more frequently. They also use more memory-related, metacognitive and cognitive strategies as well as using the strategies on factors one, "planning, organising and evaluating learning and revision" and five, "relaxing about and remembering German", more frequently⁵. This finding appears to be, at least partially, in line with the results of the studies reviewed in Chapter Two (Section 2.24), i.e. in the study conducted by Ehrman and Oxford (*1990*), judges use more metacognitive strategies than do perceivers.

Similarly, students associating themselves with the extroverted end of the "introvert/extrovert" continuum use more learning strategies in general and more affective, social and metacognitive strategies in particular. They also use the strategies on factors two, "authentic language use primarily for communicative purposes", and six, "learning through social interaction in German", more frequently. Similar findings have

⁵ Interestingly, as we see here, where a learning style preference for one pole correlates with increased use of one strategy type, other significant strategy correlations with this style component all tend to be in the same direction. In other words, a strategy preference which increases overall strategy use tends to be associated with an increase in strategy use on several categories.

DISCUSSION AND EVALUATION

also been obtained by previous researchers with Ehrman and Oxford (1989) concluding that extroverts use more affective strategies and Ehrman and Oxford (1990) indicating that they use more social strategies.

Finally, analysis of the findings concerning the style component, "visual/auditory" reveals that students preferring aural work use more strategies more frequently as well as using all of the strategy categories with the exception of the compensatory strategies more frequently. They also use the strategies on factors two, "authentic language use primarily for communicative purposes", and five, "relaxing about and remembering German, more frequently. This finding is neither supported nor rejected by the results of the relevant studies reviewed in Section 2.24.

The style component extroverted/introverted is also the only one of the five to be associated with levels of oral proficiency, with extroverts achieving, on average, a higher score of sixty as opposed to fifty seven for more introverted students (Section 4.3). This does not support Ehrman and Oxford's (1990) conclusion that students closer to the introverted end of this continuum achieved significantly higher proficiency ratings in their study. However, Ehrman and Oxford's study was not concerned exclusively with oral proficiency but were instead concerned with a candidate's "overall success as a language student (pp.315). Furthermore, the authors suggest that introversion may be advantageous in their classrooms which require concentrated study and focus.

A further study conducted by Ehrman and Oxford in 1995 failed to detect any relationship between a learner's position on the introversion/extroversion continuum and any of their measures of language proficiency. In this study, these included measures of speaking proficiency. Similarly, Kiany (1997) concludes that extroversion is not associated with increases in English proficiency among forty Iranian postgraduate students living in the United Kingdom. These students were, however, taught using the grammar-translation approach and had no exposure to English outside of the classroom.

Interestingly, however, the findings obtained by this study support claims by some applied linguists that extroverts are advantaged as language learners in that they tend to

DISCUSSION AND EVALUATION

elicit more input, produce more output, and join more readily into group activities. In this study, extroverts demonstrate a higher level of strategic activity and achieve higher scores in the oral examination. In other words, claims by psychologists that, due to biological factors, extroverts are, in general, disadvantaged learners because they are more susceptible to mental distraction and have a more limited long-term memory (*for further discussion see for example Kiany, 1997*) are not supported. However, as suggested by Ehrman and Oxford (1990), it may, indeed, be the case that students closer to the introversion end of the introversion/extroversion continuum show superior academic attainment on language skills whose acquisition requires more concentrated study and focus on detail.

None of the remaining four style continua are significantly related to oral proficiency in this study. This is in contrast with claims, for example, that learners with preferences closer to the intuitive, feeling and perceiver ends of the respective continua are advantaged as language learners (*Ehrman and Oxford, 1990*) or that those closer to the thinking end of the thinking/feeling continuum are advantaged when speaking (*Ehrman and Oxford, 1995*).

Thus, with regard to the influence of style preferences on strategic behaviour and levels of oral proficiency, the findings obtained by this study do not correspond exactly to those obtained by previous studies. However, it can be agreed that, as a result of learning style preferences, learners are predisposed to use more of particular strategy types. It is, however, also recognised here (as in Section 2.1, for example Carrell, Prince and Astika, (1996)) that few simple direct relationships exist between these variables. This may be due to several factors including the fact that different courses and assessment procedures favour different learning styles, the studies reviewed above are of an exploratory nature with the correlations tending to be weak, the degree of, for example, extroversion or introversion is difficult to measure and, finally, that learners are, in fact, complex composites of an array of style preferences some of which may influence one another.

More conclusively, the findings obtained by this study support claims that highly significant relationships exist between the three personality-related variables: level of

DISCUSSION AND EVALUATION

motivation, own perception of proficiency level, and level of enjoyment associated with learning German, and both levels of strategic behaviour and levels of oral proficiency.

These findings correspond to those obtained by the majority of studies in this area. For example, the correlations detected between levels of motivation and levels of strategic behaviour support claims that highly motivated learners use particular groups of learning strategies significantly more frequently than do less motivated learners (*Oxford and Nyikos, 1989*).

Similarly, the discovery of a relationship between self-perception of proficiency level and strategic behaviour supports the findings of a number of studies. For example, Oxford and Nyikos (*1989*), Chang, (*1990*) and Ehrman and Oxford, (*1995*) all conclude that more positive self-perceptions are associated with the use of a larger number of language learning strategies.

Thirdly, the variable "level of enjoyment associated with learning German" also appears to be positively associated with strategic behaviour. This is a variable which does not tend to appear in other studies on the impact of background characteristics on either levels of strategic behaviour or levels of proficiency. It is likely, however, to be closely associated with a positive attitude towards language learning and a high level of, in particular, intrinsic motivation.

Finally, this study also indirectly supports the claim that level of awareness about learning strategies is associated with higher levels of strategic behaviour. Although awareness is not measured directly, orally more proficient students, who used more strategies, exhibit a higher level of awareness of strategic behaviour in general and their own language learning strategies in particular. This is demonstrated by their ability to discuss in some detail the strategies they employ, their ability to deconstruct these strategies into their component parts and, finally, in their expression of their attitudes and beliefs concerning their reasons for the implementation of these strategies (Section 4.4). Thus, the suggestion that both effective and ineffective learners may be equally aware of the strategies they employ (Section 2.24) is not supported.

In conclusion, this study supports arguments that it is the personality related variables: level of motivation, own perception of proficiency level and preferred learning style, that have the greatest influence on levels of strategic behaviour. Moving beyond previous studies, it further argues that level of enjoyment associated with learning the language is also associated with levels of strategic behaviour and that all of these personality related variables are also positively associated with levels of oral proficiency.

5.24 Learning Strategies and the Acquisition Process

It is difficult to situate the question of how these strategies contribute to the process of foreign language acquisition within an existing research framework. This is primarily due to the fact that studies in the field of language learning strategies have tended to focus on the definition, classification and measurement of language learning strategies together with the identification of the types of strategic behaviour associated with positive learning outcomes (Chapter Two).

However, an exception to this rule can be found in the work of Chamot and O'Malley (*for example, 1993*) on the possibility of interpreting the findings from language learning strategy research within the framework of cognitive theories of foreign language acquisition. In their opinion, the role of language learning strategies in the process of foreign language acquisition can be best understood within a cognitive-theoretical framework (see also Section 1.24).

Such a framework draws on both information processing theory and cognitive psychology. Its objective is to explain how information is stored in the memory and, in particular, how new information is acquired. Declarative knowledge of facts, definitions or relationships ("knowing that") is stored in the form of meaning-based propositions and schemata. Procedural knowledge ("knowing how"), on the other hand, is stored as production systems or IF-THEN causal relations. Linguistic information is treated in the memory like any other information when it is declarative knowledge.

DISCUSSION AND EVALUATION

Therefore, this theory predicts that such information is best learned and retrieved by establishing linkages with related meaning-based concepts, propositions or schemata. Such an approach could begin to explain how strategies such as, "I create associations between new material and what I already know", and, "When learning a new German word, I put the word in a sentence", assist in the acquisition of declarative linguistic knowledge. Using linguistic information in its declarative form is, however, relatively slow and therefore unsuitable for spontaneous interaction. O'Malley and Chamot feel that repeated opportunities for practice may help language skills to become proceduralised. These could, for example, explain why such strategies as "I have a regular language learning partner", "I practice the sound or alphabet of German", appear to assist the language learning process.

However, O'Malley and Chamot accept that this theory is incomplete (1993:216) and needs to be augmented with information from linguistic and social research. For example, the role of affective strategies in such a theoretical framework is not immediately obvious. This is recognised by the researchers in the following comment: "...our purpose is not to be fully comprehensive but merely to illustrate potential applications of cognitive theory and to build a foundation for describing the influence of learning strategies on second language acquisition" (1993:217).

However, as mentioned above, the primary concern of language learning strategy research has to date not been the exploration of how the use of strategies contributes to the process of foreign language acquisition. In other words, there has been a "vacuum with respect to the integration of strategic processing in theories of second language acquisition" (O'Malley and Chamot, 1993:2). As a result, understanding of the way in which learners learn has been incomplete. Our understanding of the way in which teaching interacts with the learning process has therefore also been incomplete. This has been understandable given the relative youth of the field of language learning strategies and the resultant need for initial consolidation.

However, responses by the students involved in this study concerning, for example, the strategy, "I take responsibility for finding opportunities to practise German", correspond

to some extent to the functions attributed to the production of output by the output hypothesis, i.e. increasing fluency, increasing levels of metacognitive awareness, promoting noticing of gaps in knowledge of the language and encouraging the testing of hypotheses concerning how the language works. For example, those for whom this strategy implies speaking German believe that this assists their German in several ways⁶. These include helping fluency and accent as well as pointing out to them what it is that they don't know, in particular vocabulary that they are missing. They also describe speaking as helping their accuracy, their "feel" for the language and their confidence in speaking.

There is scope, therefore, for greater integration of the work being conducted in language learning strategy research and foreign language acquisition. This point and others concerning gaps in existing research are discussed in more detail in the following section.

5.25 Directions for Future Research

Collaborative work by strategy researchers, psychologists, linguists and others working in the field of foreign language acquisition could support research in the area of language learning strategies. This would facilitate such research moving beyond questions concerning the definition of learning strategies, how they should be measured and which of them are associated with higher levels of proficiency towards questions concerning why, how and if particular strategies and combinations of strategies improve various aspects of proficiency (see also Section 5.22).

Such integration could also be beneficial to the field of foreign language acquisition. For example, integrating theories and findings from research into language learning strategies might provide stimuli for future research in this field. This could, for example, take the form of extended hypotheses concerning, for instance, additional functions associated with the production of output.

⁶ At this point in the in-depth interviews, students also related speaking German to the strategies "I practise the sound or alphabet of German" and "I have a regular language learning partner". These comments, therefore, can also be applied to these strategies.

DISCUSSION AND EVALUATION

It is also possible that collaborative work might also help to address other issues in the field of foreign language acquisition. It might, for example, provide a new perspective from which the controversial question concerning the relative significance of learning approaching that of "naturalistic" first language acquisition and that tending more in the direction of "active", "aware" second/foreign language acquisition under different learning conditions, could be approached. It might also allow insights into the nature of language acquisition itself including, for example, the explanatory powers of the conflicting views that language acquisition resembles the mastering of a complex cognitive skill like any other (*O'Malley, Chamot*), that it is a unique phenomenon (*Krashen, Chomsky*), or indeed that success in language learning is, primarily, genetically predetermined (*Monaco, 1998; Rice, 1997*).

However, before such ambitious directions can be followed, and progress made on understanding the nature of language learning strategies, further work in the field of language learning strategies is required. Most importantly, the barriers hindering internal comparison need to be removed.

In order to achieve this, a greater number of studies dealing with languages other than English in both foreign and second language learning environments are required. Broadly uniform definitions, classification systems and strategy assessment techniques are also necessary (see Sections 2.22, 2.23, 2.24). Similarly, definitions of proficiency that are at least broadly comparable or have perhaps component elements that can be compared across studies are needed. Furthermore, if conclusions are to move from the general to the specific, more studies, incorporating both quantitative and qualitative methodological components, also need to be conducted in a more in-depth manner.

Longitudinal studies could also provide important additional information concerning changes in strategy use over time. Finally, as more is learnt about language learning strategies, it should be possible to refine and test a series of strategy training models (Section 5.26) in different learning environments. In this way, it should be possible to obtain more consistent information within and across populations.

DISCUSSION AND EVALUATION

Bearing in mind, how much remains to be determined, the final section considers the practical implications of these findings for the language classroom and, in particular, for the concept of strategies-based instruction.

5.26: Implications for Classroom Practice

This section reviews several key studies relating to strategy training as well as a number of instructional models designed to demonstrate how strategy training could be implemented in practice. The section concludes by considering the contributions made by this study to this field.

The area of strategy training is a fledgling one. However, studies attempting to verify empirically that learners can be trained to use language learning strategies are gradually becoming more widely known and accepted.

For example, in a study conducted by O'Malley, Chamot, Stewner-Manzanares, Kupper and Russo (1985), seventy five high school students of English as a second language were randomly assigned to a control group which received no strategy training, a group receiving training in both cognitive and metacognitive strategies and a group receiving only cognitive strategy instruction.

After two weeks of classroom strategy instruction of approximately one hour per day, all students took a general language test. The results for the speaking test revealed significant differences favouring the metacognitively and cognitively trained group over the cognitive group, who in turn scored higher than the control group. Some significant differences also appeared on subsets of the daily listening comprehension tests although not on others. Performance on the vocabulary task showed, however, no significant differences across groups.

A similar study was conducted by Brown and Perry (1991) on a university level intensive English programme. Here, Arabic-speaking students received different types of strategies instruction for vocabulary learning. On post-test, the group receiving strategies instruction which was designed to provide depth of processing through visual, auditory and semantic associations, displayed a significantly higher rate of recall.

DISCUSSION AND EVALUATION

A further study by Cohen, Weaver and Li (1995, *further elaborated on in Cohen, 1998, Chapter 5*) examines the contribution that formal, strategies-based instruction makes to speaking skills. The participants in this study were fifty five students at the University of Minnesota enrolled in French and Norwegian foreign language classes. Thirty two of these students were assigned to the experimental group and received strategies-based instruction across the full range of language skills. This instruction was incorporated into regular classroom activities and took place for the ten weeks of the autumn term. The remaining twenty three students served as a control group.

The participants were required to take an oral examination consisting of three speaking tasks at the beginning and end of the ten week session. The tasks involved describing themselves, summarising a written text orally and describing their favourite city. Their performance was rated on the basis of self-confidence in delivery, grammar, vocabulary use, and the ability to order elements of a story or summary in a coherent manner. Participants were required to fill out strategy checklists after performing each of the three tasks. Twenty one of the experimental and control group students also provided verbal report data while they completed the post-test strategy checklists indicating their rationale for their responses to certain items, as well as their reactions to the instrument itself. Finally, participants were required to complete the S.I.L.L. in the first and last week of classes. This permitted the calculation of changes in proficiency and changes in strategy use by both groups over this period.

The results indicate that the experimental group achieved significantly higher grades in the third of the three speaking tasks. Thus, the authors conclude that the explicit strategy training contributed to the students' ability to use both their own vocabulary and words from a list to describe their favourite city. Analysis of their performance by sub-scale also indicates a significantly higher rating in grammar for the experimental group. Analysis of the French grouping only, indicates a significant relationship between explicit strategy training and their score on the vocabulary scale for the third task. Furthermore, six significant correlations appeared between an increase in strategy use by the experimental group and an increase in aspects of proficiency by this group. For example, "using idioms or other routines in the new language" and "making encouraging statements to oneself to

DISCUSSION AND EVALUATION

continue to try and do one's best in language learning" correlate positively with improvement on the sub-scale of self-confidence; "using idioms or other routines in the new language" and "previewing the language lesson to get a general idea of what it is about, and how it relates to what is already known" correlate positively with vocabulary ratings; "making up new words if one doesn't know the right ones" correlates with identifying the story elements; and "deciding in advance to pay attention to particular language aspects" correlates with scores on the story ordering sub-scale.

Finally, a study was conducted with one hundred and twenty two first and fourth year students in the Department of English in an Egyptian university (*Dadour and Robbins, 1996*). The treatment group was exposed to fifteen weekly three hour sessions which provided learners with instructions on how to improve their speaking skills. Each session consisted of a warm-up, teachers' presentation and explanation with examples of new strategies, activities for practising and discussing the new strategies and homework assignments. The course gave direct instruction in the speaking skills the students needed to master and the learning strategies that they were to practise in order to improve these skills. Communication activities were also provided.

Four instruments were used to collect the data. These were an EFL teachers' speaking skills inventory, the CLEAR oral proficiency exam, the S.I.L.L. and a style analysis survey. The results indicate that the experimental group out-performed the control group at speaking at both first and fourth year level. The experimental group was also found to use more memory, cognitive, compensatory, metacognitive, affective and social strategies than did the control group. Dadour and Robbins conclude that a well-structured strategy instruction course can have a positive effect on oral communication and on the use of strategies of all kinds.

Unfortunately, reports on these studies vary with regard to the amount of information given concerning the strategy training process used. They have, nevertheless, encouraged the development of instructional models incorporating learning strategies into content instruction.

DISCUSSION AND EVALUATION

Three approaches in particular have been used in the development of the instructional models in strategy training. These are "blind", "informed" and "completely informed" training. Using the first approach, tasks or materials are employed which cause the student to use particular learning techniques. The students are not, however, explicitly informed of the nature or importance of the techniques nor of how to transfer them to new situations.

With informed strategy training, learners are told in advance what a particular strategy does and why it is useful. They are also given advice on how to use it in a variety of contexts. Finally, in the third mode the learner is not only instructed in the nature and use of particular techniques, but also explicitly taught how to transfer, monitor and evaluate them. Strategy training may also be simultaneously embedded in the instructional programme in a more implicit manner. Indeed, in some cases, strategies are embedded in language textbooks. It is this third approach that appears to date to be the most effective (*Oxford, Crookall, Cohen, Lavine, Nyikos and Sutter, 1990*).

For example, Oxford (*1990a:50; 1990b:203-209*) recommends the following approach to strategy training: Teachers should begin by identifying students' needs. This includes determining the strategies they are currently using, how effective these strategies are and how they might be improved. This could be done, for example, by administering the S.I.L.L. and by having the students keep learning diaries of their learning techniques, problems and successes. Cohen (*1998:89*) further argues that the factors involved in needs assessment should also include students' current and intended levels of proficiency, their experience with foreign language strategy use or with learning other languages, their learning style preferences and personality characteristics, their beliefs and attitudes about language learning, their expectations regarding the roles of both the classroom teacher and the individual language learner and, finally, the reasons why they have chosen to study a particular foreign language. Needs assessment can assist in the development of the students' metacognitive awareness as it requires them to describe their own thinking processes as well as their personalities and learning styles, and possibly those of their classmates (*see for example Chamot and Kupper, 1989:19*).

DISCUSSION AND EVALUATION

The next step involves choosing the relevant strategies to be taught. As well as taking research findings, including those obtained by this study, into account, a teacher's choice should also be influenced by their knowledge of particular weaknesses in a group and of the course objectives.

It is then necessary to determine how best to integrate strategy training into normal classroom activities. Integration into regular language activities provides for contextualised strategy practice and encourages students to view the use of learning strategies as relevant and essential for the completion of course work. According to Cohen (1998:82), teachers have at least three options with regard to strategy integration. They can, for example, take the established course materials as a starting point and then determine which strategies to insert and at what point. Their second option is to start with a set of strategies on which they would like to focus and to design activities around these. Finally, they can insert strategies spontaneously into the language lesson whenever it seems to be appropriate. This could arise, for example, when they would like to help students overcome specific problems with difficult material. However, in reality, it is likely that the most effective method of strategy integration consists of a combination of all three approaches whereby teachers are constantly up-dating materials with particular strategy related as well as content related objectives in mind, while also facilitating their classes wherever possible. Furthermore, as students become more experienced in the explicit implementation of strategies and more aware of their own needs, it becomes increasingly possible for them to choose their own strategies.

Oxford (1990a:50; 1990b:203-209) recommends that step four involve considering students' motivations and attitudes about themselves as learners and about learning new ways to learn.⁸ It is possible, for example, that a teacher may encounter resistance to a particular strategy. This is particularly likely if the strategy is in conflict with a student's preferred learning style (Section 2.1) in which case research (Ehrman and Oxford, 1990:323) has shown that conscious self-discipline and hard work will be required if the student is to master the strategy. It may also arise if students are unconvinced of the

⁸ There is clearly some overlap here with "needs assessment". This demonstrates the fluidity of this model and the need to move backwards and forwards between the various steps as the process evolves.

DISCUSSION AND EVALUATION

benefits that accompany systematic strategy use. Other learners may also react negatively to strategy training in general because of cultural or personal beliefs about the teacher's role in the classroom. They may resist the increased responsibility for learning which accompanies increased strategic behaviour if they perceive the teacher as a "fountain of knowledge". Considering motivations and attitudes in advance may assist a teacher in pre-empting resistance using, for example, explanation of the rationale behind the use of a particular strategy.

The teacher then conducts "completely informed training" whereby learners not only learn and practise new strategies but also learn why these strategies are important, how to evaluate their use of the strategies and how to apply them in different situations. The teacher can also elicit relevant examples from students based on their own learning experiences (*Cohen, 1998:81*).

The strategy training process should then be evaluated by the teacher either informally through discussions with the students or through formal testing. Examples of criteria which can be used to evaluate the programme include improved student performance across language tasks and skills, general learning skill improvement, maintenance of the new strategies over time, effective transfer of strategies to other learning tasks, and a positive change in learners' attitudes towards the use of language learning strategies, their language course and language learning in general. Finally, the process should be revised. Revision should be based on the results of the evaluation and, in particular, on the teachers' analyses of the students' feelings, perceptions and performance throughout the strategy training process.

Other researchers including Chamot and O'Malley, (*1994:379*) stress the importance of introducing a strategy to students early in the learning process, as they feel this assists in establishing control over the use of the strategy. They also argue in favour of repeated application of a strategy with various learning materials so that a student can gradually learn to use it automatically, rapidly and without errors. In their opinion, this eases the burden on short-term memory, which can then focus on the meaning of the target language. Chamot and O'Malley (*1994:379-380*) also argue that in order to use

strategies more effectively, learners should take the "high road" to learning. In order to do this, they must succeed in recognising parallels between new tasks and more familiar tasks on which the strategy has been applied in the past, thereby transferring the strategy. The "low road", in contrast, involves learners treating the strategy as if it must be relearned rather than recognising the way it has been used previously. Finally, they argue that verbalising strategy use helps learners acquire the metacognitive knowledge that assists in linking previous to potential strategy uses.⁹

Having now reviewed the principle strategy training studies and instructional models, the remainder of this section looks at the contributions made by this study to the field of strategy training.

Firstly, as we have seen, several studies have produced results indicating that more successful language learners use particular types of language learning strategies more frequently. These studies provided initial support for the basic concept of strategy training, i.e. that students should be trained to use particular language learning strategies. However, none of these studies had been conducted on Irish students. Furthermore, few, if any, had been carried out on students learning German as a foreign language. Therefore, empirical support for strategy training in an Irish third level context for students of German has to date been lacking. One of the significant contributions of this study is that it addresses this gap in the research conducted to date. By indicating that successful Irish students of German use particular language learning strategies, the study provides initial support for strategy training in such a context.

Secondly, the studies conducted to date in this field have focused on the quantity and types of strategies employed by more successful learners. They have tended to conclude that such learners use more cognitive, metacognitive and, in some cases, more social strategies (Section 2.25). The fact that similar findings were obtained by this study suggests that these studies more also have relevance for Irish students of German. In

⁹ This is an interesting argument in the light of the fact that the results of this study suggest an association between an ability to verbalise strategic behaviour and a high level of effective strategic activity including effective use of metacognitive strategies. Thus, a bi-directional relationship may exist between metacognitive skills and an ability to verbalise strategic behaviour.

DISCUSSION AND EVALUATION

other words, it may be the case that findings relating to strategy type may not be language or country specific.

However, the small number of studies carried out to date, which look at the individual strategies associated with higher levels of proficiency (Section 2.25), have obtained very different results to those obtained by this study. This fact is open to at least two interpretations. The discrepancy may be due to the fact that a very small number of studies have to date operated at the level of the individual strategies. Indeed, the fact that this study identifies the individual strategies associated with higher levels of proficiency constitutes a further significant innovatory element. It is also possible that the combination of individual strategies associated with higher levels of oral proficiency is something that is context specific. If the latter is the case, then the identification of the ten strategies associated with higher levels of oral proficiency in German for this particular group (figure 5.3) contributes significantly to the knowledge base required if strategy training is to be successfully introduced in similar contexts, in that it provides guidelines for teachers as to the strategies on which they might concentrate.

Figure 5.3: The "Successful" Strategies

I plan my goals for language learning, for example how proficient I want to become or how I might want to use German in the long run.
I plan what I am going to accomplish in German each day or week.
I take responsibility for finding opportunities to practise German.
I try to notice my language errors and find out the reasons for them.
I check over what I write in German.
I practise the sound or alphabet of German.
I have a regular language learning partner.
I create associations between new material and what I already know.
When learning a new German word, I put the word in a sentence.
I try to relax whenever I feel anxious about using German.

This study is also one of the first extensive correlational studies to go beyond the identification of the individual strategies associated with higher levels of oral proficiency in order to look at the way in which these strategies are used. In other words, a further significant contribution of this study is the movement below the surface level identification of "successful" strategies to the investigation of strategy implementation processes.

The information obtained as a result of this investigation provides further guidelines useful for those interested in implementing strategy training. For example, we can conclude that Irish learners of German should be trained to implement strategies in a structured and purposeful manner and to apply them to a broad range of language learning situations. However, owing to the lack of similar studies, we cannot say for

DISCUSSION AND EVALUATION

certain whether or not the findings are language and/or location specific. Given the fact that similar conclusions were reached following analysis of the qualitative results of the "good language learner" studies (Section 2.251), however, it is likely that these broad findings are universal rather than context specific.

With regard to the ten "successful" strategies (figure 5.3), the qualitative findings (Sections 4.4 and 4.5) may be more context specific. However, at least in similar classrooms, the findings contribute to the information necessary for successful strategies based instruction. The information in question is reviewed briefly in the following paragraphs.

Firstly, the findings indicate that teachers should help students develop realistic long-term goals concerning the levels of proficiency that they would like to achieve. Secondly, the results indicate that the orally more proficient students focus more on receptive activities. For example, they describe watching German television particularly useful (Section 4.4). The most effective approach seems to involve focusing on meaning and listening for repeated terms.

The "successful" learner is also constantly vigilant when it comes to possible errors. Indeed, it has become common practice on second year German language courses at Dublin City University to encourage students to attempt to identify errors in their written work before handing it to their lecturer. Furthermore, several lecturers collaborate with their students in compiling a "checklist" of the most commonly occurring errors which can then be used by the students on an individual basis. Checking will, however, not eliminate all errors. Once any remaining errors have been pointed out to the learner by the teacher, it is important that the learner understands each error, determines why they have occurred and takes steps to prevent their reoccurrence. In order to encourage this, written work can be returned with errors highlighted but not corrected. It is then the task of the student to correct the mistake.

Students should also be encouraged to improve their pronunciation. Indeed, several of the German textbooks are gradually beginning to introduce elements of strategy training

DISCUSSION AND EVALUATION

some of which concern pronunciation. For example, "*EM Hauptkurs: Deutsch als Fremdsprache für die Mittelstufe*", by Michaela Perlmann-Balme and Susanne Schwalb, Max Hueber Verlag (1997) contains a section in each chapter entitled "*Lerntechnik*" or "Learning Techniques". In the section "*Freies Sprechen*", or "Speaking Freely" (pp. 140-141), students are encouraged to practice their pronunciation by repeating German tongue-twisters at an increasing speed.

The findings obtained by this study also emphasise the importance of encouraging students to create associations between new material and what they already know. They should also be encouraged, when learning a new German word, to put the word in a sentence. Again, both of these studies are explicitly recommended in "*EM*" (pp. 44-45) in a section entitled "*Wörter lernen und behalten*", or Learning and remembering words". In this section, learners are encouraged, for example, to learn new vocabulary in a particular context and to put terms which are new to them in a sentence. A similar approach is taken by the textbook "*Leselandschaft: Unterrichtswerk für die Mittelstufe*" by Günther Hasenkamp, Verlag für Deutsch (1997), pp. 12-13 and pp. 34-35. However, textbooks such as these, which incorporate elements of strategy training, remain at present the exception rather than the rule.

Finally, as well as engaging in such memory-assisting and cognitive activities at the level of close language analysis, the findings of this study suggest that it is also important that learners be trained to stand back from these processes from time to time. Only by doing this can they determine their own state of mind and attempt to achieve an optional "emotional temperature" for the acquisition of German. Although ambitious and difficult to train in practice, it is clear that more proficient students use this strategy particularly when required to react spontaneously when they feel unprepared. Their methods include skipping difficult concepts that they feel unable to express orally at a particular time, deep breathing and attempts to rationalise fears of speaking in class. Teaching communication strategies (Section 2.21) such as circumvention and the use of "fillers" may provide a way of approaching and discussing such issues.

It should also be borne in mind that students may have been exposed to previous strategy training at primary or secondary level (Sections 3.3 and 5.12). In some cases this training may be beneficial with students finding it easier to learn new strategies. In other cases, less helpful strategies may have become fossilised and may hinder the training process. Prior to training, it is important for the teacher to attempt to determine the extent of previous strategy training. While this may not always be possible, it is important for the trainer to remain open to the fact that learners may have diverse histories in terms of their exposure to strategy training.

A further significant contribution made by this study is the analysis of the relationship between strategic behaviour and the process of foreign language acquisition. This is the first time that an analysis of this nature has been included in an extensive learning strategies study. The findings, although tentative, have some implications for the process of strategies based instruction. In particular, they indicate that certain strategies are associated with improvements in several aspects of proficiency while others influence particular aspects (Section 4.5). Furthermore, this research question included an exploration of students' views concerning the impact of the use of particular strategies on their language acquisition processes. The most significant result of this analysis was the fact that more successful students, while not sure of how the use of certain strategies support the acquisition process, are convinced of the value of using these strategies. In the language classroom, therefore, it is important that students be convinced of the value of using strategies.

Finally, this study looks at the relationship between personality-related characteristics, demographic characteristics, strategic behaviour and oral proficiency. The inclusion of this element makes this study one of the most wide-ranging to date in terms of the number of issues addressed using a single set of subjects at one point in time. The findings indicate that there is a particularly strong association between effective strategy use, higher levels of motivation and enjoyment associated with learning German, and a more positive perception of own level of proficiency in German. These findings are supported by a number of other studies which have been carried out in different contexts. This suggests that these may be universal rather than context specific findings. This does

DISCUSSION AND EVALUATION

not reduce the value of these findings. Instead, the suggestions that higher levels of strategic behaviour are associated with, for example, higher levels of motivation provides further support for the concept of strategies based instruction in general and in an Irish third level context in particular.

Thus, the above study makes a significant contribution to the field of language learning strategies. However, as we have seen (Section 5.25 in particular), there remains a great deal which is not yet understood concerning the process of proficiency development and the facilitation of this process in the classroom. In the words of Oxford, Crookall, Cohen, Lavine, Nyikos, Sutter (1990:211):

"...we have a long way to go in obtaining all the desired answers about the best way to help students become optimally effective language learners. Yet, even now, we can surmise...that strategy training may be an important part of the solution".

Sources of Reference

SOURCES OF REFERENCE

Anderson, J., 1980: *Cognitive Psychology and its Implications*, Freeman, San Francisco, U.S.A.

Anderson, J., 1985: *Cognitive Psychology and its Implications*, Carnegie-Mellon University, 2nd Edition, W.H. Freeman and Co., New York, U.S.A.

Anderson, J., 1993: *Rules of the Mind*, Erlbaum, Hillsdale, NJ, U.S.A.

Austin, J., 1962: *How to do Things With Words*, Clarendon, Oxford, England

Bachman, L., 1990: *Fundamental Considerations in Language Testing*, Oxford University Press, Oxford, England

Bachman, L. and A. Palmer, 1983: *Oral Interview of Communicative Competence*, unpublished test, University of Illinois, Urbana, U.S.A.

Bachman, L. and A. Palmer, 1996: *Language Testing in Practice: Designing and Developing Useful Language Tests*, Oxford University Press, Oxford, England

Bachman, L. and S. Savignon, 1986: "The Evaluation of Communicative Language Proficiency: A Critique of the ACTFL Oral Interview", *The Modern Language Journal*, 70(1) Spring: 380-390

Bedell, D., 1993: *Chinese Data on EFL Strategy Use Among University Students*, unpublished manuscript, University of Alabama, Tuscaloosa, AL, U.S.A.

Bialystok, E., 1979: "The Role of Conscious Strategies in Second Language Proficiency", *Canadian Modern Language Review*, 35(3): 372-94

Bialystok, E., 1990: *Communication Strategies: A Psychological Analysis of Second-Language Use*, Basil Blackwell Ltd., Oxford, England

Blackwell, A. and P. Broeder, 1992: *Interference and Facilitation in Second Language Acquisition: A Connectionist Perspective*, Seminar on PDP and NLP, San Diego, UCSD, May, U.S.A.

Bloomfield, L., 1933: *Language*, Holt, New York, U.S.A.

Boekaerts, M., 1991: "Subjective Competence, Appraisals and Self-Assessment", *Journal of the European Association for Research on Learning and Instruction*, 1: 1-17

SOURCES OF REFERENCE

Bourdin, B., 1994: "Is Written Language Production More Difficult Than Oral Language Production?", *International Journal of Psychology*, 29(5): 591-620

Briggs, I., 1980: *Gifts Differing*, Palo Alto, Consulting Psychologists Press, California, U.S.A.

Brown, T. and F. Perry Jr., 1991: "A Comparison of Three Learning Strategies for Vocabulary Acquisition", *TESOL Quarterly*, 25(4): 655-670

Bygate, M., 1988: "Units of Oral Expression and Language Learning in Small Group Interaction", *Applied Linguistics*, 10(1): 59-82

Canale, M. and M. Swain, 1980: "Theoretical Bases of Communicative Approaches to Second Language Teaching and Testing", *Applied Linguistics*, 1: 1-47

Carrell, P., Prince, M. and G. Astika, 1996: "Personality Types and Language Learning in an EFL Context", *Language Learning*, 46(1), March: 75-99

Carroll, J., 1961: "Fundamental Considerations in Testing English Proficiency of Foreign Students", *Testing the English Proficiency of Foreign Students*, Centre for Applied Linguistics, Washington, U.S.A.

Carroll, J., 1967: "Foreign Language Proficiency Levels Obtained by Graduates Near Graduation from College", *Foreign Language Annals*, 1: 131-151

Chalhoub-Deville, M., 1995: "A Contextualised Approach to Describing Oral Language Proficiency", *Language Learning*, 45(2): 251-281

Chamot, A., 1990: *Learning Strategy Instruction in the Foreign Language Classroom: Speaking*, Centre for International Education, Washington D.C., U.S.A.

Chamot, A. and L. Kupper, 1989: "Learning Strategies in Foreign Language Instruction", *Foreign Language Annals*, 22: 13-24

Chamot, A., Kupper, L and M. Impink-Hernandez, 1988a: *A Study of Learning Strategies in Foreign Language Instruction: Findings of the Longitudinal Study*, McLean, VA: Interstate Research Associates, available from ERIC clearing House on Language and Linguistics, U.S.A.

SOURCES OF REFERENCE

Chamot, A., L. Kupper, L. and M. Impink-Hernandez, 1988b: *A Study of Learning Strategies in Foreign Language Instruction: The Third Year and Final Report*, McLean, VA: Interstate Research Associates, available from ERIC clearing House on Language and Linguistics, U.S. A.

Chamot, A. and J. O'Malley, 1994: *Language Learner and Learning Strategies, Implicit and Explicit Learning of Languages*, N. Ellis (ed.), Academic Press, London, England, pp. 371-392

Chamot, A., O'Malley, J., Kupper, L. and M. Impink-Hernandez, 1987: *A Study of Learning Strategies in Foreign Language Instruction: First Year Report*, InterAmerica Research Associates, Rosslyn, VA, U.S.A.

Chomsky, N., 1965: *Aspects of the Theory of Syntax*, The M.I.T. Press, Cambridge, Massachusetts, U.S.A.

Chang, S., 1990: *A Study of the Language Learning Behaviours of Chinese Students at the University of Georgia and the Relation of Those Behaviours to Oral Proficiency and Other Factors* (Doctoral Thesis), U.M.I., University of Georgia, U.S.A.

Chaudron, C., 1988: "Second Language Classrooms: Research on Teaching and Learning", *Talking to Learn: Conversation in Second Language Acquisition*, R. Day (ed.), Newbury House, New York, U.S.A., pp. 64-84

Cohen, A., 1998: *Strategies in Learning and Using a Second Language*, Applied Linguistics and Language Study, C. Candlin (ed.), Addison Wesley Longman Ltd., New York, U.S.A.

Cohen, A., S. Weaver and T. Yuan-Li, 1995: *The Impact of Strategies-Based Instruction on Speaking a Foreign Language*, Research Report, The Centre for Advanced Research on Language Acquisition, University of Minnesota, Minneapolis, U.S.A.

Cook, V., 1991: *Second Language Learning and Language Teaching*, Edward Arnold, London, England

Cook, V., 1992: "Evidence for Multicompetence", *Language Learning*, 42(4): 557-591

Cook, V., 1993: *Linguistics and Second Language Acquisition*, Modern Linguistics Series, Professor Noel Burton-Robers, Dr. Andrew Spencer (eds.), The Macmillan Press Ltd., London, England

Cook, V., 1996: *Second Language Learning and Language Teaching*, Second edition, Hodder Headline Group, London, England

SOURCES OF REFERENCE

Corbeil, G., 1990: "Successful and Less Successful Language Learners: Differences in How They Process Information", *Journal of the Atlantic Provinces Linguistic Association*, 12: 131-45

Corder, S., 1981: *Error Analysis and Interlanguage*, Oxford University Press, Oxford, England

Cummins, J., 1991: "Interdependence of First- and Second-Language Proficiency in Bilingual Children", *Language Processing in Bilingual Children*, E. Bialystok (ed.), Cambridge University Press, Cambridge England, pp.70-89

Dadour, S. and J. Robbins, 1996: "University-Level Studies Using Strategy Instruction to Improve Speaking Ability in Egypt and Japan", *Language Learning Strategies Around the World: A Cross Cultural Perspective*, (Technical Report 13), R. Oxford (ed.), Second Language Teaching and Curriculum Centre, University of Hawai'i, Honolulu, pp. 157-66

Day, R. (ed.), 1986: *Talking to Learn: Conversation in Second Language Acquisition*, Newbury House Publishers, Cambridge, England

de Bot, K., 1992: "A Bilingual Production Model: Levelt's Speaking Model Adapted", *Applied Linguistics*, 13(1): 1-24

de Bot, K., 1996: "The Psycholinguistics of the Output Hypothesis", *Language Learning*, 46(3) September: 529-555

Dechert, H., 1986: "Thinking Aloud Protocols: The Decomposition of Language Processing", in *Experimental Approaches to Second Language Learning*, V. Cook (ed.), Pergamon Press, Oxford, England, pp. 111-126

Dechert, H., D. Moehle and M. Raupach (eds.), 1984: *Second Language Production*, Narr, Tübingen, Germany

Dell, G., 1986: "A Spreading Activation Theory of Retrieval in Sentence Production", *Psychological Review*, 93: 283-321

Doernyei, Z. and M. Scott, 1997: "Communication Strategies in a Second Language: Definitions and Taxonomies", *Language Learning*, 47(1), March: 173-210

Doernyei, Z. and S. Thurrell, 1991: "Strategic competence and How to Teach it", *E.L.T. Journal*, 45(1), January: 16-23

SOURCES OF REFERENCE

Donato, R., 1994: "Collective scaffolding in Second Language Learning", in *Vygotskian Approaches to Second Language Research*, J. Lantolf and G. Appel (eds.), Ablex, Norwood, NJ, U.S.A.

Dulay, H. and Burt, M., 1974: "Natural Sequences in Child Second Language Acquisition, *Language Learning*, 24: 37-53

Ehrman, M. and R. Oxford, 1988: "Ants and Grasshoppers, Badgers and Butterflies: Qualitative and Quantitative Exploration of Adult Language Learning Styles and Strategies", paper presented at the *Symposium on Research Perspectives on Adult Language Learning and Acquisition*, The Ohio State University, Columbia, OH, U.S.A.

Ehrman, M. and R. Oxford, 1989: "Effects of Sex Differences, Career Choice and Psychological Type on Adult Language Learning Strategies", *The Modern Language Journal*, 73: 1-13

Ehrman, M. and R. Oxford, 1990: "Adult Language Learning Styles and Strategies in an Intensive Training Setting, *The Modern Language Journal*, 74 (3), 311-327

Ehrman, M. and R. Oxford, 1995: "Cognition Plus: Correlates of Language Learning Success", *The Modern Language Journal*, 79(1): 67-89

Ellis, R., 1985: *Understanding Second Language Acquisition*, Oxford University Press, Oxford, England

Ellis, R., 1989: "Classroom Learning Styles and Their Effect on Second Language Acquisition", *System*, 17: 249-62

Ellis, R., 1990: *Instructed Second Language Acquisition: Learning in the Classroom*, Applied Language Studies, Oxford, England

Ellis, R., 1994a: *The Study of Second Language Acquisition*, Oxford University Press, Oxford, England, Chapter 12.

Ellis, R., 1994b: "A Theory of Instructed Second Language Acquisition, *Implicit and Explicit Learning of Languages*, N. Ellis (ed.), Academic Press, London, England, pp. 79-114

Ellis, R., 1995: "Apraising Second Language Acquisition Theory in Relation to Language Pedagogy", *Principle and Practice in Applied Linguistics: Studies in Honour of H. G. Widdowson*, G. Cook and B. Seidlhofer (eds.), Oxford University Press, Oxford, England, pp. 73-89

SOURCES OF REFERENCE

Ellis, R., 1997: "SLA and Language Pedagogy: An Educational Perspective", *Studies in Second Language Acquisition*, 19: 69-92

Ely, C., 1995: "Tolerance of Ambiguity and the Teaching of ESL", *Learning Strategies in the ESL/EFL Classroom*, J. Reid (ed.), Heinle and Heinle, Boston, U.S.A., pp. 87-95

Faerch, C. and G. Kasper (eds.), 1983: *Strategies in Interlanguage Communication*, Longman Publishers, London, England and New York, U.S.A.

Finkbeiner, C., 1997: "Zur affektiven und kognitiven Dimension beim Lesen: Bericht von einer Untersuchung zum Zusammenwirken von Interessen und Lernstrategien", *Zeitschrift für Fremdsprachenforschung*, 8: 197-212

Firth, A. and J. Wagner, 1997: "On Discourse, Communication and (Some) Fundamental Concepts in SLA Research", *The Modern Language Journal*, 81(iii): 285-300

Gage, N. and D. Berliner, 1991: *Educational Psychology*, fifth edition, Houghton Mifflin Company, Boston, U.S.A.

Gardner, R. and W. Lambert, 1959: "Motivational Variables in Second Language Acquisition", *Canadian Journal of Psychology*, 13: 266-72

Gardner, R. and W. Lambert, 1972: *Attitudes and Motivation in Second Language Acquisition*, Rowley, Newbury House, MA, U.S.A.

Gardner, R. and P. MacIntyre, 1993: "A Student's Contributions to Second Language Learning. Part I: Cognitive Variables", *Language Teaching*, 25: 211-220

Gardner, R. and P. MacIntyre, 1993: "A Student's Contributions to Second Language Learning. Part II: Affective Variables", *Language Teaching*, 26: 1-11

Garrett, M., 1975: "The Analysis of Sentence Production", *Psychology of Learning and Motivation*, G. Bower (ed.), Volume 9, Academic Press, New York, U.S.A.

Gass, S. and L. Selinker, 1994: *Second Language Acquisition: An Introductory Course*, Lawrence Erlbaum, Hillsdale, New Jersey, U.S.A.

SOURCES OF REFERENCE

George, D. and P. Mallery, 1995: *SPSS PC - Step by Step A Simple Guide and Reference*, Wadsworth Publishing Company, California, U.S.A

Glisan, W. and D. Foltz, 1998: "Assessing Students' Oral Proficiency in an Outcome-Based Curriculum: Student Performance and Teacher Intuitions", *The Modern Language Journal*, 82(1): 1-18

Green, J. and R. Oxford, 1995: "A Closer Look at Learning Strategies, L2 Proficiency and Gender", *TESOL Quarterly*, 29(2), 261-297

Gregg, K., 1984: "Krashen's Monitor and Occam's Razor", *Applied Linguistics*, 5: 79-100

Gu, Y. and R. Johnson, 1996: "Vocabulary Learning Strategies and Language Learning Outcomes", *Language Learning*, 46(4), December: 643-679

Halliday, M., 1976: "The Form of A Functional Grammar", *Halliday: System and Function in Language*, G. Kress (ed.), Oxford University Press, Oxford, England

Hatch, E. 1978: "Discourse Analysis, Speech Acts and Second Language Acquisition", *Second Language Acquisition Research*, W. Ritchie (ed.), New York Academic Press, New York, U.S.A.

Huang, X-H and Van Naerssen, M., 1987: "Learning Strategies for Oral Communication", *Applied Linguistics*, 8(3): 287-307

Hymes, D., 1972: "On Communicative Competence", *Sociolinguistics*, J. Price and J. Holmes (eds.), Penguin, Harmondsworth, England

Jung, C., 1921: *Psychological Types*, trans. H. Baynes, Rev. R.F. Hull, 1921; rpt (1971). Bollingen Series XX, 6, Princeton University Press, Princeton, New Jersey, U.S.A.

Kasper, G. and E. Kellerman, 1997: "Introduction: Approaches to Communication Strategies", *Communication Strategies: Psycholinguistic and Sociolinguistic Perspectives*, G. Kasper and E. Kellerman (eds.), pp 1-14

Kempen, G. and G. Hoenkamp, 1987: "An Incremental Procedural Grammar for Sentence Formulation", *Cognitive Science*, 11: 201-58

Kiany, G., 1997: "Personality and Language Learning: The Contradiction Between Psychologists and Applied Linguists", *ITL Review of Applied Linguistics* (Louvain, Belgium): 111-136

SOURCES OF REFERENCE

- Kinsella, K., 1995: "Understanding and Empowering Diverse Learners in the ESL Classroom", *Learning Styles in the ESL/EFL Classroom*, J. Reid (ed.), Heinle and Heinle, Boston, U.S. A., pp. 170-94
- Krashen, S., 1977a: "The Monitor Model for Second Language Performance", *Viewpoints on English as a Second Language*, M. Burt, H. Dulay and M. Finocchiarro (eds.), New York, U.S.A.
- Krashen, S., 1977b: "Some Issues Related to The Monitor Model", *TESOL '77: Teaching and Learning English as a Second Language: Trends in Research and Practice*, H. Brown, C. Yorio and R. Crymes (eds.), Washington, U.S.A.
- Krashen, S. 1978a: "Adult Second Language and Learning: A Review of Theory and Practice", *Second Language Acquisition and Foreign Language Teaching*, R. Gingras (ed.), Centre for Applied Linguistics, Washington, U.S.A.
- Krashen, S., 1978b: "Individual Variation in the Use of the Monitor", *Principles of Second Language Learning*, W. Ritchie (ed.), New York, U.S.A.
- Krashen, S., 1981: *Second Language Acquisition and Second Language Learning*, Pergamon Press, Oxford, England
- Krashen, S., 1982: *Principles and Practice in Second Language Acquisition*, Pergamon Press, Oxford, England
- Krashen, S., 1985: *The Input Hypothesis: Issues and Applications*, Longman, London, England
- Krashen, S., 1989: "We Acquire Vocabulary and Spelling by Reading: Additional Evidence for the Input Hypothesis", *The Modern Language Journal*, 73(4): 440-464
- Krashen, S., 1994: "The Input Hypothesis and its Rivals", *Implicit and Explicit Learning of Languages*, N. Ellis (ed.), Academic Press, London, England. pp. 45-78
- Krashen, S., and T. Terrell, 1983: *The Natural Approach: Language Acquisition in The Classroom*, Alemany Press, Hayward, CA, U.S.A.
- Lado, R., 1961: *Language Testing*, McGraw-Hill, New York, U.S.A.

SOURCES OF REFERENCE

Larsen-Freeman, D. and M. Long, 1991: *An Introduction to Second Language Acquisition Research*, Longman Group, New York, U.S.A.

Lawrence, G., 1984: "A Synthesis of Learning Style Research Involving the MBTI", *Journal of Psychological Type*, 8: 2-15

Levelt, W., 1989: *Speaking: From Intention to Articulation*, A Bradford Book, ACL-MIT Press Series in Natural Language Processing, The M.I.T. Press, Cambridge, Massachusetts, U.S.A.

Lightbown, P., 1992: "Can They Do it Themselves? A Comprehension-Based ESL Course for Young Children", *Comprehension-Based Second Language Teaching*, R. Courchene, J. Glidden, J. St. John and C. Therien (eds.), University of Ottawa Press, Ottawa, Canada, pp. 353-370

Liu, G., 1991: *Interaction and Second Language Acquisition: A Case-study of a Chinese Child's Acquisition of English as a Second Language*, PhD dissertation, La Trobe University, Australia

Long, M., 1983: "Native Speaker / Non-Native Speaker Conversation in the Second Language Classroom, in *ON TESOL*, TESOL, Washington D.C., U.S.A., pp. 207-225

MacIntyre, P., Noels, A. and R. Clement, 1997: "Biases in Self-Ratings of Second Language Proficiency: The Role of Language Anxiety", *Language Learning* (Cambridge MA), 47 (2): 265-287

Mackey, A., 1997: *"Stepping Up the Pace: Input, Interaction and Second Language Development"*, Unpublished Manuscript, Michigan State University, East Lansing, U.S.A.

MacWhinney, B. and J. Anderson, 1986: "The Acquisition of Grammar", *From Models to Modules*, I. Gopnik and M. Gopnik (eds.), Ablex, Norwood, New Jersey, U.S.A., pp. 3-23

Magiste, E., 1979: "The Competing Linguistic Systems of the Individual: A Developmental Study of Decoding and Encoding Processes, *JL'LB*, 18: 79-89

Magnan, S., 1988: "Grammar and the ACTFL Oral Proficiency Interview: Discussion and Data", *The Modern Language Journal*, 72(3): 266-276

McGroarty, M., 1987. *Patterns of Persistent Second Language Learners: Elementary Spanish*, paper presented at the annual meeting of Teachers of English to Speakers of Other Languages, Miami, U.S.A.

SOURCES OF REFERENCE

McLaughlin, B., 1984: *Second Language Acquisition in Childhood, Volume 1: Preschool Children*, Lawrence Erlbaum, Hillsdale, NJ, U.S.A.

McLaughlin, B., 1987: *Theories of Second Language Learning*, Hodder and Stoughton Ltd., London, England

McLaughlin, B., Rossman, R. and B. McLeod, 1983: "Second Language Learning: An Information Processing Perspective", *Language Learning*, 33: 135-58

Monaco, A., 1998: "News and Notes of the Profession (Review)", Gerard Ervin (ed.), "Language and Genetics", *The Modern Language Journal*, 82(3): 409

Murakmi, M., 1980: "Behavioural and Attitudinal Correlates of Progress in ESL by Native Speakers of Japanese, J. Oller and K. Perkins (eds.), *Research in Language Testing*, Newbury House, Rowley, Massachusetts, U.S.A.

Murray, E., 1964: *Motivation and Emotion*, Prentice-Hall, Englewood Cliffs, New Jersey, U.S.A.

Myers, I., 1962: *The Myers-Briggs Type Indicator*, Princetown, New Jersey, ETS, U.S.A.

Myers, I., 1987: *Introduction to Type*, fourth edition, Consulting Psychologists' Press, Palo Alto, California, U.S.A.

Myers, I. and M. McCaulley, 1985: *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*, Palo Alto, Consulting Psychologists Press, California, U.S.A.

Naiman, N., Frohlich, M. and A. Todesco, 1975: "The Good Lanugage Learner", *TESL Talk* 6: 58-75

Nicola, M., 1989: "Experimenting With New Methods in Arabic", *Dialog on Language Instruction*, 6: 61-71

Nobuyoshi, J. and R. Ellis, 1993: "Focussed Communication Tasks and Second Language Acquisition", *ELT Journal*, 47: 203-210

Nold, G., Haudeck, H. and G. Schnaitmann, 1997: "Die Rolle von Lernstrategien im Fremdsprachenunterricht", *Zeitschrift für Fremdsprachenforschung*, 8: 27-50

SOURCES OF REFERENCE

North, B., 1997 "Perspectives on Language Proficiency and Aspects of Competence", *The International Abstracting Journal for Language Teachers and Applied Linguists*, Cambridge University Press: 93-100

Nyikos, M., 1987: *The Effect of Colour and Imagry as Mnemonic Strategies on Learning and Retention of Lexical Items in German*, unpublished dissertation, Purdue University, U.S.A.

Nyikos, M. and R. Oxford, 1993: "A Factor Analytic Study of Language-Learning Strategy Use: Interpretations from Information-Processing Theory and Social Psychology", *The Modern Language Journal*, 77(1): 11-22

O'Malley, J. and A. Chamot, 1993: *Learning Strategies in Second Language Acquisition*, Cambridge University Press, England

O'Malley, J., Chamot, A. and L. Kupper, 1989: "Listening Comprehension Strategies in Second Language Acquisition", *Applied Linguistics*, 10(4): 418-437

O'Malley, J., Chamot, A., Stewner-Manzanares, G., Russo, R. and L. Kupper, 1985b: "Learning Strategy Applications with Students of English as a Second Language", *TESOL Quarterly*, 19: 285-296

Oxford, R., 1990a: "Language Learning Strategies and Beyond: A Look at Strategies in the Context of Styles", *Shifting the Instructional Focus to the Learner*, Sally Sieloff Magnan (ed.), Northeast Conference on the Teaching of Foreign Languages, Heidi Byrnes (Chair), pp. 35-51

Oxford, R., 1990b: *Language Learning Strategies: What Every Teacher Should Know*, Heinle and Heinle Publishers, Boston, U.S.A.

Oxford, R., 1992: "Key Definitions, Assumptions and Research Concerning Learning Styles as Related to Culture", *System*, 20(4): 439-456

Oxford, R., 1993a: "Individual Differences Among Your ESL Students: Why a Single Method Can't Work", *Journal of Intensive English Studies*, 7 (Spr -Aut.): 27-42

Oxford, R., 1993b: "Instructional Implications of Gender Differences in Second/Foreign Language Learning Styles and Strategies", *Applied Language Learning*, 4(1,2): 65-94

Oxford, R., 1995: "Comments on Virginia LoCastro's "Learning Strategies and Learning Environments"", *TESOL Quarterly*, 29(1): 166-171

SOURCES OF REFERENCE

Oxford, R., 1996: "Employing a Questionnaire to Assess the Use of Language Learning Strategies", *Applied Language Learning*, 7(1&2): 25-45

Oxford, R., and N. Anderson, 1995: "*A Crosscultural View of Learning Styles*", International Abstracting Journal for Language Teachers and Applied Linguists, Cambridge University Press, The British Council, England: 201-215

Oxford, R. and J. Burry-Stock, 1995: "Assessing the Use of Language Learning Strategies Worldwide With The E.S.L./E.F.L. Version of The Strategy Inventory for Language Learning, *System* (Oxford), 23 (1): 1-23 also cited in *The International Abstracting Journal for Language Teachers and Applied Linguists*, The British Council, C.I.L.T., Cambridge University Press, Cambridge, England, 1996, 29(1): 25

Oxford, R. and D. Crookall, 1989: "Research on Language Learning Strategies: Methods, Findings and Instructional Issues", *The Modern Language Journal*, 73(4): 404-419

Oxford, R., Crookall, D., Cohen, A., Lavine, R., Nyikos, M. and W. Sutter, 1990: "Strategy Training for Language Learners: Six Situational Case Studies and a Training Model", *Foreign Language Annals*, 22(3): 197-217

Oxford, R. and M. Ehrman, 1988: "Psychological Type and Adult Language Learning Strategies: A Pilot Study", *Journal of Psychological Type*, 16: 22-32

Oxford, R. and M. Ehrman, 1995: "Adults' Language Learning Strategies in an Intensive Foreign Language Program in the United States", *System*, 23(3): 359-386

Oxford, R., Ehrman, M., and R. Lavine, 1991: "Style Wars: Teacher-Student Style Conflicts in the Language Classroom", *Challenges in the 1990s for College Foreign Language Programs*, Heinle and Heinle, Boston, U.S.A., pp. 1-25

Oxford, R., and R. Lavine, 1992: "Teacher-Student Style Wars in the Language Classroom: Research Insights and Suggestions", *ADFL BULL.*, 23(2): 38-45

Oxford, R., Lavine, R. and D. Crookall, 1989: "Language Learning Strategies, the Communicative Approach, and their Classroom Implications", *Foreign Language Annals*, 22(1): 29-39

Oxford, R. and M. Nyikos, 1989: "Variables Affecting the Choice of Language Learning Strategies by University Students", *The Modern Language Journal*, 73(3): 291-300

SOURCES OF REFERENCE

Oxford, R. and J. Shearin, 1994: "Expanding the Theoretical Framework of Language Learning Motivation", *The Modern Language Journal*, 78: 12-28

Padron, Y and H. Waxman, 1988: The Effects of ESL Students' Perceptions of Their Cognitive Strategies on Reading Achievement, *TESOL Quarterly*, 22: 146-150

Park, Gi-Pyo, 1997: "Language Learning Strategies and English Proficiency in Korean University Students", *Foreign Language Annals*, New York, 30(2): 211-21

Parry, T., 1984: "*The Relationship of Selected Dimensions of Learner Cognitive Style, Aptitude and General Intelligence Factors to Selected Foreign Language Proficiency Tasks of Second Year Students of Spanish at Secondary Level*", unpublished dissertation, Ohio State University, Columbia, U.S.A.

Pica, T., Holloday, L., Lewis, N. and L. Morgenthaler, 1989: "Comprehensible Output as an Outcome of Linguistic Demands on the Learner", *Studies in Second Language Acquisition*, 11: 63-99

Politzer, R., 1983: "An Exploratory Study of Self-Reported Language Learning Behaviours and Their Relationship to Achievement", *Studies in Second Language Acquisition*, 6: 54-68

Politzer, R. and M. McGroarty, 1985: "An Exploratory Study of Learning Behaviours and Their Relationship to Gains in Linguistic and Communicative Competence", *TESOL Quarterly*, 19(1): 103-123

Poulisse, N. and T. Bongaerts, 1994: "First Language Use in Second Language Production", *Applied Linguistics*, 15(1): 36-57

Pratts, A., 1995: *Strategies Used by Successful ESL High School Students in Puerto Rico in Acquiring Oral Communicative Proficiency in English*, Doctoral Dissertation, Graduate School of Education, Fordham University, New York, U.S.A.

Purpura, J., 1997: "An Analysis of the Relationships Between Test Takers' Cognitive and Metacognitive Strategy Use and Second Language Test Performance", *Language Learning*, 47(2): 289-325

Ramsey, R., 1991: French in Action and the Grammar Question, *French Review*, 65: 255-266

Raupach, M., 1987: "Production Strategies in L2 Performance", H. Dechert and M. Raupach (eds.), *Psycholinguistic Models of Production*, Gesamthochschule Kassel, Germany, Ablex Publishing Corporation, Norwood, New Jersey, U.S.A., pp. 91-96

SOURCES OF REFERENCE

Rice, M., 1997: *Towards a Genetics of Language* (ed.), Lawrence Erlbaum Associates, Mahwah, New Jersey, U.S.A.

Rivers, W., 1983: *Speaking in Many Tongues: Essays in Foreign Language Teaching*, 3rd edition, Harvard University, New York, U.S.A.

Rogers, A., 1998: *Teaching Adults*, Open University Press, Buckingham, Philadelphia, U.S.A.

Rossi-Le, L., 1989: *Perceptual Learning Style Preferences and Their Relationship to Language Learning Strategies in Adult Students of English as a Second Language*, Unpublished Doctoral Dissertation, Drake University, Des Moines, IA, U.S.A.

Rubin, J., 1975: "What the Good Language Learner Can Teach Us", *TESOL Quarterly*, 9: 41-51

Rubin, J., 1981: "Study of Cognitive Processes in Second Language Learning", *Applied Linguistics*, 11: 110-131

Rubin, J., 1987: "Learner Strategies, Theoretical Assumptions, Research History and Typology", *Learner Strategies in Language Learning*, A. Wenden and J. Rubin (eds.), Englewood Cliffs, Prentice Hall, NJ, U.S.A.

Rumelhart, D. and McClelland, J., 1986: (eds.), *Parallel Distributed Processing: Explorations in the Microstructure of Cognition*, Mass, MIT Press, Cambridge, Massachusetts, U.S.A.

Salaberry, M., 1997: "The Role of Input and Output Practice in Second Language Acquisition", *The Canadian Modern Language Review*, 53(2): 422-451

Selinker, L., 1972: "Interlanguage", *IRLL*, 10: 209-31

Skutnabb-Kangas, T. and P. Toukomaa, 1976: *Teaching Migrant Children's Mother Tongue and Learning in the Host Country in the Context of the Sociocultural Situation of the Migrant Family*, The Finnish National Commission for UNESCO, Helsinki, Finland

Stansfield, C., and D. Kenyon, 1992: "The Development and Validation of a Simulated Oral Proficiency Interview", *The Modern Language Journal*, 76(ii): 129-141

SOURCES OF REFERENCE

Sternberg, R., 1986: A Triarchic Theory of Human Intelligence, *Human Assessment: Cognition and Motivation*, S. Newstead, S. Irvine and P. Dann (eds.), Dordrecht: Martinus Nijhoff, The Netherlands, pp. 43-47

Swain, M., 1985: "Communicative Competence: Some Roles of Comprehensible Input and Comprehensible Output in its Development", *Input in Second Language Acquisition*, S. Gass and C. Madden (eds.), Newbury House Publishers Inc., Rowley Massachusetts, U.S.A., pp. 235-256

Swain, M., 1988: "Manipulating and Complementing Content Teaching to Maximise Second Language Learning", *TESL*, Canada, 6: 68-83

Swain, M., 1993: "The Output Hypothesis: Just Speaking and Writing Aren't Enough", *Canadian Modern Language Review* (Toronto), 50(1): 158-64

Swain, M., 1995: "Three Functions of Output in Second Language Learning", *Principle and Practice in Applied Linguistics: Studies in Honour of H. G. Widdowson*, G. Cook and B. Seidlhofer (eds.), Oxford University Press, Oxford, England, pp. 125-144

Swain, M. and S. Lapkin, 1995: "Problems in Output and the Cognitive Processes They Generate: A Step Towards Second Language Learning", *Applied Linguistics*, 16(3): 371-391

Swain, M. and S. Lapkin, 1998: "Interaction and Second Language Learning: Two Adolescent French Language Students Working Together", *The Modern Language Journal*, 82(3): 320-337

Sy, B., 1994 (May): *Sex Differences and Language Learning Strategies*, paper presented at the 11th Conference of Teachers of English to Speakers of Other Languages, Taiwan, Republic of China

Tarone, E., 1979: "Interlanguage as Chameleon", *Language Learning*, 29(1): 181-191

Tarone, E., 1983: *Second Language Acquisition in a Variationist Framework*, University of Minnesota, ms, Minneapolis, U.S.A.

Taylor, D., 1988: "The Meaning and Use of the Term "Competence" in Linguistics and Applied Linguistics", *Applied Linguistics*, 9 (2): 148-168

Thompson, I., 1995: "A Study of Interrater Reliability of the ACTFL Oral Proficiency Interview in Five European Languages: Data from ESL, French, German, Russian and Spanish", *Foreign Language Annals*, 28 (3): 407-422

SOURCES OF REFERENCE

Towell, R., 1987: "Approaches to the Analysis of the Oral Language Development of the Advanced Language Learner", *The Advanced Language Learner*, J. Coleman and R. Towell (eds.), CILTR, London, England, pp. 113-28

van Dijk, T.A. and W. Kintsch, 1983: *Strategies of Discourse Comprehension*, Academic Press, New York, U.S.A.

Van Hout, R., 1998: "*Uses and Abuses of Statistical Techniques in Linguistic Research*", Centre for Language Studies, Tilburg University, The Netherlands. lecture given in Trinity College Dublin, Ireland, May 5th

Vandergrift, L., 1997: "The Cinderella of Communication Strategies: Reception Strategies in Interactive Listening", *The Modern Language Journal*, 81(4): 494-505

Vann, R. and R. Abraham, 1989 (March): *Strategies of Unsuccessful Language Learners*, paper presented at the annual meeting of Teachers of English to Speakers of Other Languages, San Francisco, Ca, U.S.A.

Weinstein, C., 1987: *LASSI: Learning and Study Strategies Inventory*, H&H Publishing, Clearwater, Florida, U.S.A.

Wen, X., 1997: "Motivation and Language Learning with Students of Chinese", *Foreign Language Annals*, 30(2): 235-251

Wenden, A. and J. Rubin (eds.), 1987: *Learner Strategies in Language Learning*, Englewood Cliffs, Prentice Hall, New Jersey, U.S.A.

Wiemann, J. and J. Daly, 1994: Introduction: Getting Your Own Way, in J. Daly and J. Wiemann (eds.), *Strategic Interpersonal Communication*, Lawrence Erlbaum, Hillsdale, New Jersey, U.S.A., pp. vii-xiv

Wilkins, 1974: *Second Language Learning and Teaching*, Edward Arnold, London, England

Appendices

Appendix A

The Strategy Inventory for Language Learning (modified version)

APPENDIX A

Answer Key

1. Never or almost never true of me
2. Generally not true of me
3. Somewhat true of me
4. Generally true of me
5. Always or almost always true of me

The Strategy Inventory for Language Learning:

(revised version for Ge260 German Language)

Instructions:

Procedure: Read each item. Choose a response from the answer key above and write it in the space provided.

Note: These questionnaires will be used solely for a research project designed to look at the learning strategies students use and will have no effect on your results. Furthermore, there are no right or wrong answers to this questionnaire. Using a very large number of strategies is not necessarily positive. Try to answer as truthfully as possible.



Improving my ability to remember German:

When learning a new German word...

1. I create associations between new material and what I already know. ____
2. I put the new word in a sentence. ____
3. I place the new word in a group with other words that are similar in some way
(for example words relating to young people or nouns ending in -ung). ____
4. I associate the sound of a new word with the sound of a familiar word. ____
5. I use rhyming to remember the word. ____
6. I remember the word by making a mental image of it or drawing a picture. ____
7. I visualise the spelling of the new word in my mind. ____
8. I use a combination of sounds and images to remember the new word. ____
9. I list all the other words I know that are related to the new word and draw lines to show relationships.

10. I remember where the new word is located on the page, or where I first saw or heard it. ____
11. I use flashcards with the new word on one side and the definition or other information on the other.

12. I physically act out the new word. ____

Memorandum only
Lodgment

Branch

Name

Account Number

Brand/Initials

Make: Cheques, etc. subject to Memorandum and Lodgment and are transferable for collection in accordance with the provisions of the Bills of Exchange Act, 1882, and the Bills of Exchange Act, 1908, and the Bills of Exchange Act, 1926, and the Bills of Exchange Act, 1931, and the Bills of Exchange Act, 1932, and the Bills of Exchange Act, 1933, and the Bills of Exchange Act, 1934, and the Bills of Exchange Act, 1935, and the Bills of Exchange Act, 1936, and the Bills of Exchange Act, 1937, and the Bills of Exchange Act, 1938, and the Bills of Exchange Act, 1939, and the Bills of Exchange Act, 1940, and the Bills of Exchange Act, 1941, and the Bills of Exchange Act, 1942, and the Bills of Exchange Act, 1943, and the Bills of Exchange Act, 1944, and the Bills of Exchange Act, 1945, and the Bills of Exchange Act, 1946, and the Bills of Exchange Act, 1947, and the Bills of Exchange Act, 1948, and the Bills of Exchange Act, 1949, and the Bills of Exchange Act, 1950, and the Bills of Exchange Act, 1951, and the Bills of Exchange Act, 1952, and the Bills of Exchange Act, 1953, and the Bills of Exchange Act, 1954, and the Bills of Exchange Act, 1955, and the Bills of Exchange Act, 1956, and the Bills of Exchange Act, 1957, and the Bills of Exchange Act, 1958, and the Bills of Exchange Act, 1959, and the Bills of Exchange Act, 1960, and the Bills of Exchange Act, 1961, and the Bills of Exchange Act, 1962, and the Bills of Exchange Act, 1963, and the Bills of Exchange Act, 1964, and the Bills of Exchange Act, 1965, and the Bills of Exchange Act, 1966, and the Bills of Exchange Act, 1967, and the Bills of Exchange Act, 1968, and the Bills of Exchange Act, 1969, and the Bills of Exchange Act, 1970, and the Bills of Exchange Act, 1971, and the Bills of Exchange Act, 1972, and the Bills of Exchange Act, 1973, and the Bills of Exchange Act, 1974, and the Bills of Exchange Act, 1975, and the Bills of Exchange Act, 1976, and the Bills of Exchange Act, 1977, and the Bills of Exchange Act, 1978, and the Bills of Exchange Act, 1979, and the Bills of Exchange Act, 1980, and the Bills of Exchange Act, 1981, and the Bills of Exchange Act, 1982, and the Bills of Exchange Act, 1983, and the Bills of Exchange Act, 1984, and the Bills of Exchange Act, 1985, and the Bills of Exchange Act, 1986, and the Bills of Exchange Act, 1987, and the Bills of Exchange Act, 1988, and the Bills of Exchange Act, 1989, and the Bills of Exchange Act, 1990, and the Bills of Exchange Act, 1991, and the Bills of Exchange Act, 1992, and the Bills of Exchange Act, 1993, and the Bills of Exchange Act, 1994, and the Bills of Exchange Act, 1995, and the Bills of Exchange Act, 1996, and the Bills of Exchange Act, 1997, and the Bills of Exchange Act, 1998, and the Bills of Exchange Act, 1999, and the Bills of Exchange Act, 2000, and the Bills of Exchange Act, 2001, and the Bills of Exchange Act, 2002, and the Bills of Exchange Act, 2003, and the Bills of Exchange Act, 2004, and the Bills of Exchange Act, 2005, and the Bills of Exchange Act, 2006, and the Bills of Exchange Act, 2007, and the Bills of Exchange Act, 2008, and the Bills of Exchange Act, 2009, and the Bills of Exchange Act, 2010, and the Bills of Exchange Act, 2011, and the Bills of Exchange Act, 2012, and the Bills of Exchange Act, 2013, and the Bills of Exchange Act, 2014, and the Bills of Exchange Act, 2015, and the Bills of Exchange Act, 2016, and the Bills of Exchange Act, 2017, and the Bills of Exchange Act, 2018, and the Bills of Exchange Act, 2019, and the Bills of Exchange Act, 2020, and the Bills of Exchange Act, 2021, and the Bills of Exchange Act, 2022, and the Bills of Exchange Act, 2023, and the Bills of Exchange Act, 2024, and the Bills of Exchange Act, 2025.

f me

ie of me

an material.....

791012

so that the revision sessions are initially close together in time and gradually
 ad apart. ____
 y memory of material I learned much earlier. ____

Increasing my knowledge of German:

16. I say or write new expressions repeatedly to practise them. ____
17. I imitate the way native speakers talk. ____
18. I read a story or dialogue several times until I can understand it. ____
19. I check over what I write in German. ____
20. I practise the sound or alphabet of German. ____
21. I use idioms or other routines in the German. ____
22. I use familiar words in different combinations to make new sentences. ____
23. I initiate conversations in German. ____
24. I watch television or films or listen to the radio in German. ____
25. I try to think in German. ____
26. I participate in out-of-class events where German is spoken. ____
27. I read for pleasure in German. ____
28. I write personal notes, messages, letters or reports in German. ____
29. I skim the reading passage first to get the main idea, then I go back and read it more carefully. ____
30. I seek specific details in what I hear or read ____.
31. I use reference materials such as dictionaries to help me use German. ____
32. I take notes in class in German. ____
33. I make summaries of German material. ____
34. I apply general rules to new situations when using German. ____
35. I find the meaning of a word by dividing it into parts which I understand. ____
36. I look for similarities and contrasts between German and my own language. ____
37. I try to understand what I have heard or read without translating it word-for-word into my own language. ____
38. I am cautious about transferring words or concepts directly from my language to German. ____
39. I look for patterns in German. ____

APPENDIX A

Answer Key

1. Never or almost never true of me
2. Generally not true of me
3. Somewhat true of me
4. Generally true of me
5. Always or almost always true of me

40. I develop my own understanding of how German works, even if I sometimes have to revise my understanding based on new information. ____

Making up for gaps in my knowledge of German:

41. When I do not understand all the words I read or hear, I guess the general meaning by using any clue I can find, for example, clues from the context or situation. ____
42. I read without looking up every unfamiliar word. ____
43. In a conversation I anticipate what the other person is going to say based on what has been said so far. ____
44. If I am speaking and cannot think of the right expression, I use gestures or switch back to my own language momentarily. ____
45. I ask the other person to tell me the right word if I cannot think of it in a conversation. ____
46. When I cannot think of the correct expression to say or write, I find a different way to express the idea, for example, I use a synonym or describe the idea. ____
47. I make up new words if I do not know the right ones. ____
48. I direct the conversation to a topic for which I know the words. ____

Organising and controlling my learning of German:

49. I preview the language lesson to get a general idea of what it is about, how it is organised and how it relates to what I already know. ____
50. When someone is speaking German, I try to concentrate on what they are saying and put other unrelated topics out of my mind. ____
51. I decide in advance to pay special attention to specific language aspects, for example, I focus on the way certain sounds are pronounced. ____
52. I try to find out all I can about how to be a better language learner by reading books or articles, or by talking with others about how to learn. ____
53. I arrange my schedule to study and practice German consistently, not just when there is the pressure of a test. ____
54. I arrange my physical environment to promote learning, for example, I find a quiet place in which to revise. ____
55. I organise my language notes to record important language information. ____
56. I plan my goals for language learning, for instance, how proficient I want to become or how I might want to use the language in the long run. ____

APPENDIX A

Answer Key

1. Never or almost never true of me
2. Generally not true of me
3. Somewhat true of me
4. Generally true of me
5. Always or almost always true of me

57. I plan what I am going to accomplish in language learning each day or week. ____
58. I prepare for a language task (e.g. giving a German presentation) by considering the nature of the task, what I have to know and my current language skills. ____
59. I clearly identify the purpose of the language activity, for instance, in a listening task I might need to listen to the general idea or specific facts. ____
60. I take responsibility for finding opportunities to practice German. ____
61. I actively look for people with whom I can speak German. ____
62. I try to notice my language errors and find out the reason for them. ____
63. I learn from my mistakes in using German. ____
64. I evaluate the general progress I have made in learning German. ____

Improving how I feel about learning German:

65. I try to relax whenever I feel anxious about using German. ____
66. I make encouraging statements to myself about learning German. ____
67. I actively encourage myself to take risks in learning German, such as guessing meanings or trying to speak even though I might make some mistakes. ____
68. I give myself a tangible reward when I have done something well in my German language learning. ____
69. I pay attention to signs of stress that might affect my learning of German. ____
70. I keep a private journal where I write my feelings about learning German. ____
71. I talk to someone I trust about my attitudes and feelings concerning the language learning process. ____

Working with other people to improve my German:

72. If I do not understand I ask the speaker to slow down, repeat or clarify what was said. ____
73. I ask others to clarify that I have understood or said something correctly. ____
74. I ask other people to correct my pronunciation. ____
75. I work with other language learners to practice, revise or share information. ____
76. I have a regular language learning partner. ____
77. When I am talking to a native speaker I try to let them know if I need help. ____.
78. In conversation with others in German, I ask questions in order to be as involved as possible and show that I am interested. ____
79. I try to learn about the culture of places where German is spoken. ____

APPENDIX A

Answer Key

1. Never or almost never true of me
2. Generally not true of me
3. Somewhat true of me
4. Generally true of me
5. Always or almost always true of me

80. I pay close attention to the thoughts and feelings of other people with whom I interact in German.

Name: _____ Course: _____ Date: _____

Many thanks for your participation!

Appendix B

Background Questionnaire

APPENDIX B

Background Questionnaire:

1. Age: _____ 2. How long have you been studying German? _____

3. How do you rate your oral proficiency in German, where oral proficiency relates to your ability to use German both accurately and fluently in communicative situations (*please circle*)?

Excellent Good Average Fair Poor

4. How important is it for you to become proficient in German (*please circle*)?

Very Important Important Fairly Important Not Very Important Not Important

5. Which of the following is closest to your approach to learning German (*please circle either a) or b) in each case*)?

a. "I look for the overall idea and like communicating freely."

b. "I concentrate on details and analyse each individual word."

a. "I try to get an overview of the German language and how all the different elements fit together."

b. "I prefer concrete, factual learning and a clear course structure."

a. "I plan my study carefully in order to meet deadlines, and prefer to avoid any confusion as to what everything means."

b. "I don't mind if I don't understand everything at once, I like flexible deadlines and working independently."

a. "I enjoy conversation and role-play with others."

b. "I prefer to work alone and to concentrate on my own ideas."

a. "I prefer to see any new words I hear written down either in texts or on overheads."

b. "I'm happy listening to German without seeing it written down."

6. Do you enjoy learning German (*please circle*)?

Not at all not very much reasonably well quite a lot very much

Vielen Dank!

Appendix C

Interview Protocol

APPENDIX C

Interview Protocol

Strategies:

Prior to the interviews, strategies having a significant positive association with oral proficiency were identified. These were as follows:

1. "I create associations between new material and what I already know".
2. "I practice the sound or alphabet of German".
(2.1 "I speak to others in German")
3. "I try to relax whenever I feel anxious about using German".
4. "I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long-run".
 - 4.1 I plan what I am going to accomplish in language learning each day or week.
(4.2 "What motivates you to put effort into learning German?")
5. "I have a regular language learning partner".
6. "When learning a new German word, I put the word in a sentence".
7. "I check over what I write in German".
 - 7.1 "I try to notice my language errors and find out the reasons for them".
 - 7.2 "I learn from my mistakes in using German".
8. "I take responsibility for finding opportunities to practice German"
9. *What one thing that you do, either inside or outside of class, in your opinion helps your German the most?¹*

Procedure:

To begin, students were informed that the interviews were purely for research purposes, would not be graded in any way and that there were no right or wrong answers to any of the questions. They were then given a list of the strategies to be discussed (see above).

The questions (below) served as a guide for the relatively unstructured, exploratory interviews. Areas 1-3 were discussed with each participant for each of the strategies they used. Prompts in italics were given where necessary. Permission was given by all of the participants for the interviews to be recorded.

¹ Strategy 2.1 and questions 4.2 and 9 were also included in the interviews in order to obtain additional information.

Questions/Areas for Discussion:

(Re Research Question 3)

1. Can you tell me exactly what you mean by (strategy x)

What exactly do you do when you use this strategy?

What particular steps do you follow, if any?

Do you change the way you use this strategy. If so when and how?

2. When do you use this strategy?

in what context (at home/in class/other)?

with which types of exercise/material in particular? (when reading, writing, listening or speaking?)

on your own / in groups?

What, in particular, encourages you to use this strategy?

(Re Research Question 4)

3. How do you think that using this strategy improves your German?

Why do you use this strategy

Does it help you with particular aspects of your German

If so, which aspects?

How does it help you when you read / write / listen / speak?

(relate to cognitive theory)

Does it help you acquire information about German?

If so, can you give some examples?

Does it help you do things more automatically, i.e. without thinking about them? If so, what exactly?

Does it help you link new information with what you have learnt before?

(relate to output hypothesis) productive strategies only

Does it help you obtain feedback?

Does the person you are talking to realise your level and speak more suitably?

Does it improve your fluency?

Does it help you realise what you don't know?

Does it help you test out your ideas about what you think is right in German?

Does it encourage you to think about the language as a whole?

(to get an overview of German)

Appendix D

S.P.S.S. Statistical Output

APPENDIX D

METHOD 1: FACTOR ANALYSIS

Initial Statistics:

Variable	Communality	* Factor	Eigenvalue	Pct of Var	Cum Pct
ADVANCE	1.00000	* 1	10.41606	13.0	13.0
ALPHABET	1.00000	* 2	4.74344	5.9	18.9
ANTICIPA	1.00000	* 3	4.02479	5.0	24.0
ASK	1.00000	* 4	3.24858	4.1	28.0
ASSOCIAT	1.00000	* 5	3.05092	3.8	31.9
BETTER	1.00000	* 6	2.73080	3.4	35.3
CHECK	1.00000	* 7	2.59663	3.2	38.5
CLARIFY	1.00000	* 8	2.31920	2.9	41.4
COMBINE	1.00000	* 9	2.19600	2.7	44.2
CONCENTR	1.00000	* 10	2.09383	2.6	46.8
CORRECT	1.00000	* 11	2.06472	2.6	49.4
CULTURE	1.00000	* 12	1.89625	2.4	51.7
DAY	1.00000	* 13	1.86520	2.3	54.1
DETAILS	1.00000	* 14	1.81200	2.3	56.3
DIRECT	1.00000	* 15	1.75446	2.2	58.5
ENCOURAG	1.00000	* 16	1.63584	2.0	60.6
ENVIRON	1.00000	* 17	1.52640	1.9	62.5
ERRORS	1.00000	* 18	1.49947	1.9	64.3
FAMILIAR	1.00000	* 19	1.43768	1.8	66.1
FEELINGS	1.00000	* 20	1.39520	1.7	67.9
FLASHCAR	1.00000	* 21	1.31098	1.6	69.5
GENERAL	1.00000	* 22	1.27816	1.6	71.1
GESTURES	1.00000	* 23	1.15995	1.4	72.6
GOALS	1.00000	* 24	1.12682	1.4	74.0
GROUP	1.00000	* 25	1.09398	1.4	75.3
GUESS	1.00000	* 26	1.07177	1.3	76.7
HELP	1.00000	* 27	1.01153	1.3	78.0
IDIOM	1.00000	* 28	.96647	1.2	79.2
IMAGE	1.00000	* 29	.95365	1.2	80.4
IMITATE	1.00000	* 30	.91773	1.1	81.5
INITIATE	1.00000	* 31	.83885	1.0	82.5
JOURNAL	1.00000	* 32	.78680	1.0	83.5
LANGNOTE	1.00000	* 33	.78137	1.0	84.5
LINES	1.00000	* 34	.74325	.9	85.4
LOCATION	1.00000	* 35	.69095	.9	86.3
LOOK	1.00000	* 36	.67599	.8	87.1
MISTAKES	1.00000	* 37	.64226	.8	87.9
NEWWORDS	1.00000	* 38	.62767	.8	88.7
NOTES	1.00000	* 39	.59682	.7	89.5
NTRANSFE	1.00000	* 40	.57239	.7	90.2
OUTSIDE	1.00000	* 41	.53201	.7	90.9
PARTNER	1.00000	* 42	.51086	.6	91.5
PARTS	1.00000	* 43	.46294	.6	92.1
PATTERNS	1.00000	* 44	.45234	.6	92.6
PHYSICAL	1.00000	* 45	.42426	.5	93.2
PRACTICE	1.00000	* 46	.40390	.5	93.7
PREPARE	1.00000	* 47	.37697	.5	94.1
PREVIEW	1.00000	* 48	.35567	.4	94.6
PROGRESS	1.00000	* 49	.33326	.4	95.0
PURPOSE	1.00000	* 50	.31946	.4	95.4
QUESTION	1.00000	* 51	.28720	.4	95.8
READP	1.00000	* 52	.28433	.4	96.1
READUN	1.00000	* 53	.25027	.3	96.4
REFERENC	1.00000	* 54	.23681	.3	96.7
REFRESH	1.00000	* 55	.22786	.3	97.0
RELAX	1.00000	* 56	.22281	.3	97.3
REPEAT	1.00000	* 57	.20167	.3	97.5
REPONSIB	1.00000	* 58	.18624	.2	97.8
REVISE	1.00000	* 59	.17725	.2	98.0
REWARD	1.00000	* 60	.16542	.2	98.2
RHYME	1.00000	* 61	.14631	.2	98.4
RISKS	1.00000	* 62	.14055	.2	98.6
SCHEDULE	1.00000	* 63	.12575	.2	98.7
SENTENCE	1.00000	* 64	.12180	.2	98.9
SESSIONS	1.00000	* 65	.10758	.1	99.0
SEVERAL	1.00000	* 66	.09745	.1	99.1

APPENDIX D

SIMILARD	1.00000	*	67	.09227	.1	99.2
SKIM	1.00000	*	68	.08434	.1	99.4
SLOW	1.00000	*	69	.07797	.1	99.5
SOUNDIMA	1.00000	*	70	.07159	.1	99.5
STRESS	1.00000	*	71	.06612	.1	99.6
SUMMARY	1.00000	*	72	.05566	.1	99.7
SYNONYM	1.00000	*	73	.05227	.1	99.8
TALK	1.00000	*	74	.04809	.1	99.8
TELEVISI	1.00000	*	75	.04063	.1	99.9
THINK	1.00000	*	76	.03301	.0	99.9
VISUALIS	1.00000	*	77	.02831	.0	99.9
UNDERSTA	1.00000	*	78	.01855	.0	100.0
WORKS	1.00000	*	79	.01431	.0	100.0
WRITEP	1.00000	*	80	.01103	.0	100.0

PC extracted 7 factors.

VARIMAX rotation 1 for extraction 1 in analysis 1 - Kaiser Normalization.

VARIMAX converged in 18 iterations.

Rotated Factor Matrix:

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
ADVANCE	.32231	.36433			
ALPHABET					
ANTICIPA			.38214	-.30025	.30196
ASK					
ASSOCIAT		.33592			
BETTER	.46331				
CHECK	.39923			.35562	-.42513
CLARIFY					
COMBINE			.35748		
CONCENTR				.49900	
CORRECT					
CULTURE		.54156			
DAY	.63745				
DETAILS			.56021		
DIRECT					
ENCOURAG		.51156			
ENVIRON				.35837	
ERRORS	.59664				
FAMILIAR					.36138
FEELINGS					.50774
FLASHCAR					
GENERAL			.54315		
GESTURES					
GOALS	.58244	.31894			
GROUP	.32528				
GUESS			.50015		
HELP					.45874
IDIOM				-.35470	
IMAGE					.36608
IMITATE		.49564			.30009
INITIATE		.60317			
JOURNAL					
LANGNOTE	.45833				
LINES					
LOCATION		.30642			
LOOK		.65161			
MISTAKES	.63968				
NEWORDS				-.43594	
NOTES				.43563	
NTRANSFE		.36583			
OUTSIDE		.55380			
PARTNER	.56899				
PARTS			.44072		
PATTERNS			.52922		
PHYSICAL					.40945
PRACTICE	.59843				
PREPARE			.40783		

APPENDIX D

PREVIEW	.53980				
PROGRESS	.48919				
PURPOSE			.50166		
QUESTION			.31224		.42630
READP		.35358		-.34257	
READUN		.31064		-.52673	
REFERENC				.41344	
REFRESH	.34341			.36076	
RELAX		.44383			-.30371
REPEAT					
REPONSIB		.71018			
REVISE	.56000				
REWARD		.31768			.50530
RHYME					.44859
RISKS					
SCHEDULE	.45440	.35139			
SENTENCE	.48859				
SESSIONS	.49243				
SEVERAL		.35332			
SIMILARD			.35531	.32475	
SKIM			.47143		
SLOW			.41617		
SOUNDIMA					
STRESS	.36646		.34429		.35496
SUMMARY	.39920				.42252
SYNONYM		.33303	.36654		
TALK				.69066	
TELEVISI		.66955			
THINK		.54048			
VISUALIS			.46173		
UNDERSTA		.34877			
WORKS			.67171		
WRITEP	.30210	.37265			

Factor 6 Factor 7

ADVANCE		.30682			
ALPHABET	.38113				
ANTICIPA		.43819			
ASK		.43147			
ASSOCIAT					
BETTER					
CHECK					
CLARIFY	.69363				
COMBINE					
CONCENTR					
CORRECT	.64723				
CULTURE					
DAY					
DETAILS					
DIRECT		.46281			
ENCOURAG					
ENVIRON					
ERRORS					
FAMILIAR					
FEELINGS					
FLASHCAR					
GENERAL					
GESTURES		.55681			
GOALS					
GROUP		.38577			
GUESS					
HELP	.41436				
IDIOM					
IMAGE					
IMITATE					
INITIATE					
JOURNAL		-.36032			
LANGNOTE		.38411			
LINES					
LOCATION					
LOOK		-.30362			

APPENDIX D

MISTAKES		
NEWWORDS	.32468	
NOTES		.32872
NTRANSFE		
OUTSIDE		.42798
PARTNER	.34283	
PARTS		
PATTERNS		
PHYSICAL		
PRACTICE	.42073	
PREPARE	.30296	
PREVIEW		
PROGRESS		
PURPOSE		
QUESTION		
READP		
READUN		
REFERENC		.30394
REFRESH		
RELAX		
REPEAT		
REPONSIB		
REVISE		
REWARD		
RHYME		
RISKS		
SCHEDULE		
SENTENCE		
SESSIONS		
SEVERAL		
SIMILARD		
SKIM		
SLOW	.64577	
SOUNDIMA		
STRESS		
SUMMARY		
SYNONYM		
TALK		
TELEVISI		
THINK		
VISUALIS		
UNDERSTA		.32429
WORKS		
WRITEP		

Factor Transformation Matrix:

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	.63813	.56717	.43176	.11859	.15513
Factor 2	.27782	-.53721	.29347	.51486	-.39594
Factor 3	-.53511	.00655	.65880	-.24436	.08956
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 4	-.33216	.36814	-.00391	.58297	.28019
Factor 5	.29191	-.41768	-.03912	-.20289	.76241
Factor 6	-.16541	-.26219	.20674	.44907	.37259
Factor 7	-.07972	.10465	-.49915	.28012	.11197
	Factor 6	Factor 7			
Factor 1	.20465	.06833			
Factor 2	-.10788	.33853			
Factor 3	.19501	.41695			
Factor 4	-.56676	.12064			
Factor 5	-.21805	.26233			
Factor 6	.45151	-.56285			
Factor 7	.57951	.55381			

APPENDIX D

Factor Listings and Loadings:

Factor 1:

"Planning, organising and evaluating learning and revision"
(Metacognitive)

Strategy	Loadings
I plan what I am going to accomplish in language learning each day or week	.63745
I try to notice my language errors and find out the reasons for them.	.59664
I learn from my mistakes in using German.	.63968
I evaluate the general progress I have made in using German.	.48919
I work with other language learners to practice, revise or share information.	.59843 (6/.42073)
I have a regular language learning partner.	.56899 (6/.34283)
I try to find out all I can about how to be a better language learner by reading books or articles, or by talking with others about how to learn.	.46331
I put the new word in a sentence	.48859
I revise often.	.56000
I schedule my revision so that the revision sessions are initially close together in time and gradually become more widely spread apart.	.49243
I make summaries of German material.	.39920
I preview the language lesson to get a general idea of what it is about, how it is organised and how it relates to what I already know.	.53980
I arrange my schedule to study and practice German consistently not just when there is the pressure of a test.	.45440 (2/.35139)
I organise my language notes to record important language information.	.45833 (7/.38411)
I plan my goals for language learning, for instance how proficient I want to become or how I might use the language in the long run.	.58244 (.31894)

Factor 2

"Authentic" language use primarily for communicative purposes"
(Cognitive/Social)

Strategy	Loadings
I create associations between new material and what I already know.	.33592
I imitate the way native speakers talk.	.49564
I watch television or films or listen to the radio in German.	.66955
I try to think in German.	.54048
I read for pleasure in German.	.35358 (4/.34257)
I write personal notes, messages, letters or reports in German.	.37265 (1/.30210)
I try to understand what I have heard or read without translating it word for word into my own language.	.34877 (7/.32429)
I am cautious about transferring words or concepts directly from my language to German.	.36583
I take responsibility for finding opportunities to practice German.	.71018
I actively look for people with whom I can speak German.	.65161 (7/.30362)
I make encouraging statements to myself about learning German.	.51156
I try to relax whenever I feel anxious about using German.	.44383 (5/.30371)
I remember where the new word is located on the page, or where I first saw or heard it.	.30602
I initiate conversations in German.	.60317
I decide in advance to pay attention to specific language	

APPENDIX D

aspects for example I focus on the way certain sounds are pronounced.	.36433 (1/.32231) (7/.30682)
Factor 3	
"Analysis of German as a System" (Cognitive)	
Strategy	Loading
I visualise the spelling of the new word in my mind.	.46173
I read a story or dialogue several times until I can understand it.	.35531 (2/.35332) (4/.32475)
I skim the reading passage first to get the main idea, then I go back and read it more carefully.	.41617
I seek specific details in what I hear or read.	.56021
I apply general rules to new situations when using German.	.54315
I find the meaning of a word by dividing it into parts which I can understand.	.44072
I look for patterns in German.	.52922
I develop my own understanding of how German works, even if I sometimes have to revise my understanding based on new information.	.67171
When I do not understand all the words I read or hear, I guess the general meaning by using any clue I can find, for example clues from the context or situation.	.50015
When I cannot think of the correct expression to say or write, I find a different way to express the idea, for example I use a synonym to describe the idea.	.36654 (2/.33303)
I prepare for a language task by considering the nature of the task, what I have to know and my current language skills.	.40783 (6/.30296)
I clearly identify the purpose of the language activity, for instance in a listening task I might need to listen to the general idea or specific facts.	.50166
I use familiar words in different combinations to make new sentences.	.36138
I look for similarities and contrasts between German and my own language.	.47143
Factor 4:	
"Getting the feel of German" (Metacognitive/Cognitive)	
Strategy	Loadings
I use idioms or other routines in German.	.35470
I arrange my physical environment to promote learning, for example I find a quiet place in which to revise.	
I take notes in class in German.	.35837
I read without looking up every unfamiliar word.	.52673 (2/.31064)
I talk to someone I trust about my attitudes and feelings concerning the language learning process.	.69066
I go back to refresh my memory of material I learned much earlier.	.36076 (1/.34341)
I use reference materials such as dictionaries to help me use German.	.41344 (7/.30394)
I make up new words if I don't know the right one.	.43594 (6/.32468)
When someone is speaking German I try to concentrate on what they are saying and put other unrelated topics out of my mind.	.43594 (7/.30394)

APPENDIX D

Factor 5:

"Relaxing about and remembering German"
(Memory/Affective)

Strategy	Loading
I associate the sound of a new word with the sound of a familiar word.	.36138
I remember the word by making a mental image of it or drawing a picture.	.36608
I physically act out the new word.	.40945
I check over what I write in German.	.42513 (1/.39923) (4/.35562)
I give myself a tangible reward when I have done something well in my German language learning.	.50530 (2/.31768)
I pay attention to signs of stress that might affect my learning of German.	.42252 (1/.36646)
I pay close attention to the thoughts and feelings of other people with whom I interact in German.	.50774
In conversations with others in German, I ask questions in order to be as involved as possible and show that I am interested.	.42630 (3/.31224)
I use rhyming to remember the word.	.40859
When I am talking to a native speaker I try to let them know if I need help.	.45874 (6/.41436)
I use combinations of sounds and images to remember the new word.	.35496 (3/.34429)

Factor 6:

"Learning through social interaction in German"
(Social)

Strategy	Loading
I practice the sound or alphabet of German.	.38113
I ask others to clarify that I have understood or said something correctly.	.69363
I ask others to correct my pronunciation.	.64723

Factor 7:

"Making up for gaps in knowledge"
(Compensatory strategies)

Strategy	Loading
I keep a private journal where I write my feelings about learning German.	.36032
I place the new words in a group with others that are similar in some way.	.38577 (1/.32528)
If I am speaking and cannot think of the right expression, I use gestures or switch back to my own language momentarily.	.55681
I direct the conversation to a topic for which I know the words.	.46281
I ask the other person to tell me the right word if I cannot think of it in a conversation.	.43147
In a conversation I anticipate what the other person is going to say based on what has been said so far.	.43819 (3/.38214) (4/.33025) (5/.30196)

*indicates that the factor onto which the strategy loads slightly less strongly (difference less than 0.1 may intuitively be its more realistic and consistent factor).

APPENDIX D

Final Factor Listing - after adjustments:

Factor One: *"Planning, Organising and Evaluating Learning and Revision"*

I plan what I am going to accomplish in language learning each day or week.
I check over what I write in German.
I try to notice my language errors and find out the reason for them.
I learn from my mistakes in using German.
I evaluate the general progress I have made in using German.
I work with other language learners to revise or share information.
I try to find out all I can about how to be a better language learner by reading books or articles or by talking with others about how to learn.
I put the new word in a sentence.
I have a regular language learning partner.
I revise often.
I schedule my revision so that the revision sessions are initially close together in time and gradually become more widely spread apart.
I make summaries of German material.
I preview the language lesson to get a general idea of what it is about, how it is organised and how it relates to what I already know.
I arrange my schedule to study and practice German consistently not just when there is the pressure of a test.
I organise my language notes to record important language information.
I plan my goals for language learning, for example how proficient I want to become or how I might want to use the language in the long run.
I go back to refresh my memory of material I learned much earlier.

Factor Two: *"Authentic language use, primarily for communicative purposes"*

I create associations between new material and what I already know.
I imitate the way native speakers talk.
I watch television of films or listen to the radio in German.
I try to think in German.
I try to relax whenever I feel anxious about using German.
I read for pleasure in German.
I write personal notes, messages, letters or reports in German.
I try to understand what I have heard or read without translating it word for word into my own language.
I am cautious about transferring words or concepts directly from my language to German.
I take responsibility for finding opportunities to practise German.
I actively look for people with whom I can speak German.
I make encouraging statements to myself about learning German.
I remember where the new word is located on the page or where I first saw or heard it.
I initiate conversations in German.
I decide in advance to pay attention to specific language aspects, for example I focus on the way certain sounds are pronounced.

APPENDIX D

Factor Three: *"Analysis of German as a system"*

I visualise the spelling of the new word in my mind.

I read a story or dialogue several times until I can understand it.

I skim the reading passage first several times to get the main idea, then I go back and read it more carefully.

I seek specific details in what I hear or read.

I apply general rules to new situations when using German.

I look for patterns in German.

I develop my own understanding of how German works, even if I sometimes have to revise my understanding based on new information.

When I do not understand all the words I read or hear, I guess the general meaning by using any clue I can find, for example clues from the context or situation.

When I cannot think of the correct expression to say or write, I find a different way to express the idea, for example I use a synonym to describe the idea.

I prepare for a language task by considering the nature of the task, what I have to know and my current language skills.

I clearly identify the nature of the language activity, for instance in a listening task I might need to listen to the general idea or specific facts.

I use familiar words in different combinations to make new sentences.

I look for similarities and contrasts between German and my own language.

Factor Four: *"Getting the feel of German"*

I use idioms or other routines in German.

I arrange my physical environment to promote learning, for example I find a quiet place in which to revise.

I take notes in class in German.

I read without looking up every unfamiliar word.

I talk to someone I trust about my attitudes and feelings about the language learning process.

I use reference materials such as dictionaries to help me use German.

I make up new words if I don't know the right one.

When someone is speaking German I try to concentrate on what they are saying and put other unrelated topics out of my mind.

Factor Five: *"Relaxing about and remembering German"*

I associate the sound of a new word with the sound of a familiar word.

I remember the word by making a mental image of it or by drawing a picture.

I physically act out the new word.

I give myself a tangible reward when I have done something well in my German language learning.

I pay attention to signs of stress that might affect my learning of German.

I pay close attention to the thoughts and feelings of other people with whom I interact in German.

In conversations with others in German, I ask questions in order to be as involved as possible and show that I am interested.

APPENDIX D

I use rhyming to remember the word.

I use combinations of sounds and images to remember the new word.

Factor Six: *"Learning through social interaction in German"*

When I'm talking to a native speaker, I try to let them know if I need help

I practise the sound or alphabet of German.

I ask others to clarify that I have understood or said something correctly.

I ask others to correct my pronunciation.

Factor Seven: *"Making up for gaps in knowledge"*

If I am speaking and cannot think of the right expression, I use gestures or switch back to my own language momentarily.

I direct the conversation to a topic for which I know the words.

I keep a private journal where I write my feelings about learning German.

I place the new words in a group with others that are similar in some way.

I ask the other person to tell me the right word if I cannot think of it in a conversation.

In a conversation I anticipate what the other person is going to say based on what has been said so far.

APPENDIX D

METHOD 2: MULTIPLE REGRESSION

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. INDRES

Block Number	1.	Method:	Stepwise	Criteria	PIN	.0500	POUT	.1000
ADVANCE	ALPHABET	ANTICIPA	ASK	ASSOCIAT	BETTER	CHECK	CLARIFY	
COMBINE	CONCENTR	CORRECT	CULTURE	DAY	DETAILS	DIRECT	ENCOURAG	
ENVIRON	ERRORS	FAMILIAR	FEELINGS	FLASHCAR	GENERAL	GESTURES	GOALS	
GROUP	GUESS	HELP	IDIOM	IMAGE	IMITATE	INITIATE	JOURNAL	
LANGNOTE	LINES	LOCATION	LOOK	MISTAKES	NEWORDS	NOTES	NTRANSFE	
OUTSIDE	PARTNER	PARTS	PATTERNS	PHYSICAL	PRACTICE	PREPARE	PREVIEW	
PROGRESS	PURPOSE	QUESTION	READP	READUN	REFERENC	REFRESH	RELAX	
REPEAT	REPONSIB	REVISE	REWARD	RHYME	RISKS	SCHEDULE	SENTENCE	
SESSIONS	SEVERAL	SIMILARD	SKIM	SLOW	SOUNDIMA	STRESS	SUMMARY	
SYNONYM	TALK	TELEVISI	THINK	UNDERSTA	VISUALIS	WORKS	WRITEP	

Variable(s) Entered on Step Number

1.. RELAX

Multiple R .37654
 R Square .14178
 Adjusted R Square .13302
 Standard Error 6.99746

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	792.72926	792.72926
Residual	98	4798.51074	48.96440

F = 16.18991 Signif F = .0001

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
RELAX	2.709259	.673331	.376538	4.024	.0001
(Constant)	48.986667	2.522969		19.416	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	-.033108	-.035487	.985973	-.350	.7273
ALPHABET	.193478	.208848	.999991	2.103	.0380
ANTICIPA	.120940	.129552	.984793	1.287	.2012
ASK	-.077824	-.083880	.996988	-.829	.4091
ASSOCIAT	.140347	.149905	.979084	1.493	.1386
BETTER	-.019943	-.021154	.965630	-.208	.8354
CHECK	.249346	.259639	.930535	2.648	.0095
CLARIFY	.162206	.174739	.995963	1.748	.0837
COMBINE	-.015858	-.016933	.978498	-.167	.8679
CONCENTR	-.110996	-.119077	.987736	-1.181	.2404
CORRECT	.143916	.154175	.984938	1.537	.1276
CULTURE	.054961	.057743	.947293	.570	.5702
DAY	.112557	.116951	.926524	1.160	.2490
DETAILS	.140711	.150500	.981782	1.499	.1370
DIRECT	-.083981	-.090462	.995776	-.895	.3732
ENCOURAG	-.088346	-.081700	.733944	-.807	.4214
ENVIRON	-.026801	-.028930	1.000000	-.285	.7762
ERRORS	.164056	.173205	.956608	1.732	.0864
FAMILIAR	-.127629	-.137216	.991995	-1.364	.1756
FEELINGS	-.016710	-.018023	.998323	-.178	.8595
FLASHCAR	-.055293	-.059659	.999096	-.589	.5575
GENERAL	.172561	.186022	.997330	1.865	.0653
GESTURES	-.154464	-.164722	.976000	-1.645	.1032
GOALS	.258749	.268251	.922404	2.742	.0073
GROUP	.118585	.126643	.978820	1.257	.2116

APPENDIX D

GUESS	-.021919	-.023589	.994002	-.232	.8167
HELP	.027190	.029079	.981617	.287	.7751
IDIOM	.218368	.234295	.987970	2.374	.0196
IMAGE	-.074542	-.080448	.999602	-.795	.4286
IMITATE	.077327	.083245	.994606	.823	.4127
INITIATE	.109805	.117400	.981050	1.164	.2472
JOURNAL	.034698	.037451	.999819	.369	.7129
LANGNOTE	.072631	.078214	.995227	.773	.4416
LINES	.079718	.085060	.977106	.841	.4025
LOCATION	.036626	.039402	.993270	.388	.6986
LOOK	.127097	.133133	.941675	1.323	.1890
MISTAKES	.155183	.166257	.985068	1.661	.1000
NEWWORDS	.034132	.036791	.997142	.363	.7177
NOTES	.075376	.080850	.987388	.799	.4263
NTRANSFE	.149111	.157985	.963403	1.576	.1183
OUTSIDE	.127823	.136140	.973549	1.353	.1791
PARTNER	.191327	.204463	.980112	2.057	.0424
PARTS	.038227	.041259	.999784	.407	.6851
PATTERNS	.054376	.058446	.991507	.577	.5655

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PHYSICAL	-.125843	-.135638	.997018	-1.348	.1807
PRACTICE	.141356	.152515	.999058	1.520	.1318
PREPARE	.121093	.130710	.999957	1.298	.1972
PREVIEW	-.055076	-.059141	.989567	-.583	.5609
PROGRESS	.079344	.085191	.989372	.842	.4018
PURPOSE	.057831	.060857	.950359	.600	.5496
QUESTION	.025113	.027108	.999988	.267	.7900
READP	.091077	.096251	.958507	.952	.3433
READUN	.135502	.146047	.996986	1.454	.1492
REFERENC	-.036602	-.039509	.999955	-.389	.6978
REFRESH	-.052312	-.055950	.981732	-.552	.5823
REPEAT	.024083	.025819	.986360	.254	.7997
REPONSIB	.134550	.138900	.914617	1.381	.1703
REVISE	-.117807	-.126327	.986833	-1.254	.2128
REWARD	-.148122	-.158112	.977883	-1.577	.1180
RHYME	-.130208	-.140358	.997223	-1.396	.1658
RISKS	.097873	.102352	.938564	1.013	.3134
SCHEDULE	.084315	.089526	.967591	.885	.3782
SENTENCE	.201845	.212705	.953056	2.144	.0345
SESSIONS	.067819	.073058	.995941	.721	.4724
SEVERAL	.093185	.098545	.959792	.975	.3318
SIMILARD	-.129802	-.139358	.989230	-1.386	.1689
SKIM	.167247	.178522	.977837	1.787	.0771
SLOW	.084095	.090737	.999124	.897	.3718
SOUNDIMA	.072925	.078709	.999754	.778	.4387
STRESS	-.176459	-.190401	.999188	-1.910	.0591
SUMMARY	.093554	.100972	.999698	1.000	.3200
SYNONYM	.146778	.157070	.982795	1.566	.1205
TALK	-.033119	-.035181	.968442	-.347	.7296
TELEVISI	.040238	.042466	.955896	.419	.6764
THINK	.075327	.079026	.944564	.781	.4368
UNDERSTA	.103858	.110720	.975375	1.097	.2753
VISUALIS	8.720E-04	.000932	.980178	.009	.9927
WORKS	.111627	.119971	.991321	1.190	.2369
WRITEP	.187832	.202750	.999953	2.039	.0441

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number

2.. GOALS

Multiple R .45115
 R Square .20354
 Adjusted R Square .18711
 Standard Error 6.77565

APPENDIX D

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	1138.02265	569.01133
Residual	97	4453.21735	45.90946

F = 12.39421 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
GOALS	1.609476	.586869	.258749	2.742	.0073
RELAX	2.190650	.678857	.304460	3.227	.0017
(Constant)	45.912568	2.687879		17.081	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	-.109790	-.117496	.853373	-1.159	.2492
ALPHABET	.153560	.169228	.892240	1.682	.0957
ANTICIPA	.106143	.117809	.905534	1.162	.2480
ASK	-.069154	-.077323	.920701	-.760	.4492
ASSOCIAT	.156826	.173532	.899861	1.726	.0875
BETTER	-.125624	-.129303	.806020	-1.278	.2045
CHECK	.170560	.166798	.755055	1.657	.1007
CLARIFY	.107250	.116217	.866144	1.146	.2545
COMBINE	-.058805	-.064290	.889995	-.631	.5294
CONCENTR	-.145294	-.160478	.907364	-1.593	.1144
CORRECT	.108056	.118741	.900710	1.172	.2442
CULTURE	.016132	.017384	.891568	.170	.8651
DAY	-.013668	-.012957	.712639	-.127	.8992
DETAILS	.132962	.147550	.908847	1.462	.1471
DIRECT	-.078492	-.087744	.918065	-.863	.3903
ENCOURAG	-.119787	-.114366	.706810	-1.128	.2621
ENVIRON	-.079984	-.087794	.885136	-.864	.3900
ERRORS	.092994	.096683	.830123	.952	.3436
FAMILIAR	-.105668	-.117432	.914670	-1.159	.2495
FEELINGS	-.031524	-.035231	.919181	-.345	.7305
FLASHCAR	-.110834	-.121505	.883749	-1.199	.2333
GENERAL	.139748	.154764	.903432	1.535	.1281
GESTURES	-.135390	-.149404	.907318	-1.480	.1420
GROUP	.084966	.093257	.904190	.918	.3611
GUESS	-.030689	-.034263	.915877	-.336	.7377
HELP	.028196	.031302	.907002	.307	.7596
IDIOM	.174176	.189810	.883089	1.894	.0612
IMAGE	-.058948	-.065905	.918662	-.647	.5191
IMITATE	.017677	.019159	.867672	.188	.8515
INITIATE	.058494	.063397	.879639	.622	.5351
JOURNAL	-.006858	-.007577	.896851	-.074	.9410
LANGNOTE	-.043036	-.043384	.750197	-.425	.6714
LINES	.049822	.054772	.908707	.537	.5922
LOCATION	-.010001	-.010974	.890626	-.108	.9146
LOOK	.095593	.103070	.885296	1.015	.3125
MISTAKES	.068830	.070621	.785113	.694	.4896
NEWORDS	.085663	.094026	.887654	.925	.3571
NOTES	.002518	.002681	.843654	.026	.9791
NTRANSFE	.086306	.091300	.853369	.898	.3713
OUTSIDE	.077853	.084111	.880815	.827	.4103
PARTNER	.137744	.148070	.866166	1.467	.1457
PARTS	-.021329	-.023228	.871511	-.228	.8204
PATTERNS	.041057	.045743	.917381	.449	.6547
PHYSICAL	-.123000	-.137609	.919549	-1.361	.1766

Equation Number 1 Dependent Variable.. INDR

APPENDIX D

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PRACTICE	.066509	.070311	.821824	.691	.4915
PREPARE	.047416	.050417	.830614	.495	.6220
PREVIEW	-.138402	-.147748	.846059	-1.464	.1465
PROGRESS	-.004307	-.004527	.820176	-.044	.9647
PURPOSE	.012329	.013247	.892496	.130	.8970
QUESTION	.042819	.047860	.917834	.469	.6398
READP	.084959	.093174	.889242	.917	.3615
READUN	.121615	.135842	.919365	1.343	.1823
REFERENC	-.075642	-.083794	.901588	-.824	.4120
REFRESH	-.110730	-.120117	.880593	-1.185	.2388
REPEAT	-.032465	-.035245	.877870	-.346	.7304
REPONSIB	.063234	.064731	.834626	.636	.5266
REVISE	-.224302	-.235793	.822695	-2.377	.0194
REWARD	-.146071	-.161849	.902965	-1.607	.1113
RHYME	-.131658	-.147317	.919888	-1.459	.1477
RISKS	.054524	.058270	.886953	.572	.5687
SCHEDULE	.001142	.001189	.822131	.012	.9907
SENTENCE	.176390	.191822	.892159	1.915	.0585
SESSIONS	.010669	.011606	.872840	.114	.9097
SEVERAL	.027726	.029342	.857248	.288	.7743
SIMILARD	-.127215	-.141769	.913751	-1.403	.1638
SKIM	.124480	.135478	.889938	1.340	.1835
SLOW	.043362	.047870	.896119	.470	.6397
SOUNDIMA	.083755	.093750	.920703	.923	.3585
STRESS	-.263895	-.284372	.853790	-2.906	.0045
SUMMARY	.037678	.041050	.872308	.403	.6882
SYNONYM	.096736	.104874	.878582	1.033	.3041
TALK	-.085277	-.092251	.875381	-.908	.3663
TELEVISI	.020088	.021937	.891987	.215	.8302
THINK	.039534	.042610	.888681	.418	.6770
UNDERSTA	.055092	.059700	.884465	.586	.5593
VISUALIS	-.032617	-.035871	.906531	-.352	.7258
WORKS	.120928	.134821	.913248	1.333	.1856
WRITEP	.144124	.158266	.885950	1.570	.1196

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number
3.. STRESS

Multiple R .51763
R Square .26794
Adjusted R Square .24507
Standard Error 6.52966

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	3	1498.14169	499.38056
Residual	96	4093.09831	42.63644

F = 11.71253 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
GOALS	2.075433	.587849	.333660	3.531	.0006
RELAX	2.094621	.655045	.291114	3.198	.0019
STRESS	-1.718871	.591440	-.263895	-2.906	.0045
(Constant)	48.454604	2.733988		17.723	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	-.035105	-.037475	.820077	-.366	.7155

APPENDIX D

ALPHABET	.166641	.191322	.831509	1.900	.0605
ANTICIPA	.127297	.146908	.852628	1.448	.1510
ASK	-.059797	-.069693	.852139	-.681	.4976
ASSOCIAT	.160874	.185654	.850185	1.842	.0687
BETTER	-.056580	-.058586	.781412	-.572	.5687
CHECK	.108353	.107447	.665628	1.053	.2948
CLARIFY	.088875	.100194	.797586	.982	.3288
COMBINE	-.084293	-.095689	.824843	-.937	.3512
CONCENTR	-.131986	-.151842	.843669	-1.497	.1376
CORRECT	.092250	.105531	.830712	1.034	.3036
CULTURE	.019175	.021552	.835879	.210	.8340
DAY	.024837	.024361	.687774	.238	.8128
DETAILS	.125396	.145080	.852531	1.429	.1562
DIRECT	-.046397	-.053645	.851017	-.524	.6018
ENCOURAG	-.047532	-.045798	.679624	-.447	.6560
ENVIRON	-.042389	-.047992	.832837	-.468	.6406
ERRORS	.110809	.119923	.781530	1.177	.2420
FAMILIAR	-.106020	-.122897	.847215	-1.207	.2304
FEELINGS	.006354	.007325	.853552	.071	.9432
FLASHCAR	-.070910	-.080028	.832639	-.783	.4359
GENERAL	.111115	.127465	.829075	1.253	.2134
GESTURES	-.142700	-.164187	.849762	-1.622	.1080
GROUP	.059973	.068324	.831354	.668	.5061
GUESS	-.046532	-.054086	.851610	-.528	.5988
HELP	.055505	.063923	.852891	.624	.5339
IDIOM	.200061	.226430	.827425	2.266	.0257
IMAGE	.007286	.008208	.838162	.080	.9364
IMITATE	.085362	.093697	.826521	.917	.3613
INITIATE	.064654	.073070	.819091	.714	.4769
JOURNAL	.068801	.076251	.846750	.745	.4579
LANGNOTE	-.084681	-.088146	.680484	-.863	.3906
LINES	.063079	.072241	.844577	.706	.4819
LOCATION	.023699	.026900	.835513	.262	.7937
LOOK	.125397	.140211	.845889	1.380	.1708
MISTAKES	.094981	.101223	.746576	.992	.3239
NEWWORDS	.093375	.106858	.821431	1.048	.2975
NOTES	-6.710E-04	-.000745	.784490	-.007	.9942
NTRANSFE	.084715	.093474	.793655	.915	.3625
OUTSIDE	.094322	.106093	.823215	1.040	.3010
PARTNER	.158106	.176796	.812421	1.751	.0832
PARTS	-.069565	-.077782	.789615	-.760	.4489
PATTERNS	.062833	.072763	.853064	.711	.4788
PHYSICAL	-.056599	-.063435	.846840	-.620	.5370

Equation Number 1 Dependent Variable... INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PRACTICE	.096540	.105836	.779353	1.037	.3022
PREPARE	.058606	.064942	.779470	.634	.5274
PREVIEW	-.096005	-.105354	.804944	-1.033	.3044
PROGRESS	.009105	.009969	.771512	.097	.9228
PURPOSE	-7.364E-04	-.000824	.824098	-.008	.9936
QUESTION	.074426	.086143	.845108	.843	.4015
READP	.123177	.139551	.853611	1.374	.1728
READUN	.098491	.114239	.848171	1.121	.2652
REFERENC	-.077735	-.089818	.835390	-.879	.3816
REFRESH	-.080860	-.090850	.827386	-.889	.3762
REPEAT	-.011812	-.013334	.822289	-.130	.8969
REPOINSIB	.073596	.078530	.788412	.768	.4445
REVISE	-.182909	-.197524	.786676	-1.964	.0525
REWARD	-.048197	-.050718	.766760	-.495	.6218
RHYME	-.086094	-.098618	.851861	-.966	.3365
RISKS	.107464	.117722	.841026	1.155	.2508
SCHEDULE	.026524	.028666	.777955	.280	.7805
SENTENCE	.237931	.264479	.851549	2.673	.0088
SESSIONS	.087859	.095966	.832094	.940	.3498
SEVERAL	.011938	.013155	.790979	.128	.8982
SIMILARD	-.127862	-.148625	.853716	-1.465	.1463
SKIM	.123723	.140452	.825668	1.383	.1700

APPENDIX D

SLOW	-.010556	-.011891	.812193	-.116	.9080
SOUNDIMA	.099698	.116183	.850909	1.140	2571
SUMMARY	.021755	.024676	.804415	.241	.8104
SYNONYM	.121983	.137351	.823888	1.352	.1797
TALK	-.047068	-.052514	.834738	-.513	.6095
TELEVISI	.040669	.046183	.851133	.451	.6533
THINK	.062748	.070279	.842439	.687	.4939
UNDERSTA	.055562	.062801	.821338	.613	.5411
VISUALIS	-.063363	-.072198	.832500	-.706	.4822
WORKS	.101024	.117098	.853639	1.149	.2533
WRITEP	.192604	.217529	.834547	2.172	.0323

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number

4. . SENTENCE

Multiple R	.56493
R Square	.31915
Adjusted R Square	.29048
Standard Error	6.33020

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	4	1784.44980	446.11245
Residual	95	3806.79020	40.07148

F = 11.13292 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
GOALS	1.997286	.570642	.321096	3.500	.0007
RELAX	1.758688	.647353	.244426	2.717	.0078
SENTENCE	1.615311	.604306	.237931	2.673	.0088
STRESS	-2.030459	.585103	-.311732	-3.470	.0008
(Constant)	46.733036	2.727605		17.133	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	-.066436	-.072986	.819517	-.710	.4798
ALPHABET	.147354	.174732	.830407	1.721	.0886
ANTICIPA	.131188	.156966	.850339	1.541	.1267
ASK	-.076483	-.092192	.849611	-.898	.3717
ASSOCIAT	.135042	.160401	.847184	1.576	.1185
BETTER	-.084253	-.089964	.776285	-.876	.3834
CHECK	.048682	.048671	.662720	.472	.6377
CLARIFY	.062562	.072643	.797266	.706	.4818
COMBINE	-.100684	-.118239	.823658	-1.154	.2512
CONCENTR	-.127878	-.152524	.841309	-1.496	.1379
CORRECT	.084327	.099969	.829039	.974	.3325
CULTURE	.040764	.047316	.832458	.459	.6471
DAY	-.065380	-.063196	.636106	-.614	.5407
DETAILS	.102872	.122754	.850608	1.199	.2335
DIRECT	-.020471	-.024382	.849298	-.236	.8136
ENCOURAG	-.031568	-.031485	.659892	-.305	.7607
ENVIRON	-.063468	-.074220	.831698	-.722	.4723
ERRORS	.054630	.059467	.781142	.578	.5649
FAMILIAR	-.093342	-.112014	.845412	-1.093	.2772
FEELINGS	-.006977	-.008326	.851388	-.081	.9358
FLASHCAR	-.092718	-.108065	.831521	-1.054	.2946
GENERAL	.071355	.083446	.828751	.812	.4189
GESTURES	-.111058	-.131035	.848305	-1.281	.2032
GROUP	.061541	.072698	.829136	.707	.4815
GUESS	-.061805	-.074329	.849652	-.723	.4717
HELP	.024374	.028831	.850199	.280	.7804
IDIOM	.153385	.174907	.827355	1.722	.0883

APPENDIX D

IMAGE	-.030824	-.035548	.833686	-.345	.7310
IMITATE	.068734	.078038	.825330	.759	.4498
INITIATE	.055827	.065376	.817607	.635	.5268
JOURNAL	.031306	.035511	.835777	.345	.7312
LANGNOTE	-.089505	-.096590	.679538	-.941	.3492
LINES	.036894	.043519	.843275	.422	.6737
LOCATION	.038911	.045703	.832483	.444	.6584
LOOK	.065081	.072526	.835654	.705	.4825
MISTAKES	.038642	.041500	.745579	.403	.6881
NEWWORDS	.074715	.088356	.817793	.860	.3920
NOTES	.020254	.023236	.780182	.225	.8222
NTRANSFE	.082628	.094534	.791895	.921	.3596
OUTSIDE	.038792	.043852	.823203	.426	.6714
PARTNER	.146770	.169971	.811174	1.672	.0978
PARTS	-.108181	-.123957	.789570	-1.211	.2289
PATTERNS	.009339	.010897	.851288	.106	.9161
PHYSICAL	-.058906	-.068455	.822625	-.665	.5075

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PRACTICE	.034018	.037241	.778571	.361	.7187
PREPARE	.011903	.013407	.779400	.130	.8968
PREVIEW	-.159426	-.176609	.804924	-1.740	.0852
PROGRESS	-.019718	-.022229	.771398	-.216	.8298
PURPOSE	-.021831	-.025240	.823146	-.245	.8072
QUESTION	.057970	.069386	.842216	.674	.5017
READP	.076602	.087892	.850971	.855	.3945
READUN	.110240	.132420	.845587	1.295	.1984
REFERENC	-.096705	-.115490	.834115	-1.127	.2625
REFRESH	-.105251	-.122016	.826474	-1.192	.2363
REPEAT	.016148	.018769	.817859	.182	.8560
REPONSIB	.059781	.066038	.787516	.642	.5227
REVISE	-.229288	-.253268	.786668	-2.538	.0128
REWARD	-.034566	-.037661	.734958	-.365	.7156
RHYME	-.075869	-.090024	.849807	-.876	.3831
RISKS	.082566	.093247	.839810	.908	.3662
SCHEDULE	.003197	.003566	.777624	.035	.9725
SESSIONS	.034375	.037905	.827877	.368	.7139
SEVERAL	-.002258	-.002575	.790098	-.025	.9801
SIMILARD	-.135785	-.163567	.851445	-1.607	.1113
SKIM	.073129	.083684	.825613	.814	.4176
SLOW	-.017293	-.020190	.810643	-.196	.8452
SOUNDIMA	.098305	.118787	.848652	1.160	.2490
SUMMARY	-.013529	-.015733	.804260	-.153	.8791
SYNONYM	.117130	.136726	.822110	1.338	.1841
TALK	-6.599E-04	-.000749	.829221	-.007	.9942
TELEVISI	.024006	.028194	.849231	.273	.7851
THINK	.060152	.069855	.840364	.679	.4989
UNDERSTA	.085026	.098925	.816820	.964	.3376
VISUALIS	-.094323	-.110543	.831707	-1.078	.2836
WORKS	.067017	.079560	.851153	.774	.4410
WRITEP	.156560	.180545	.834028	1.780	.0784

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number
5.. REVISE

Multiple R .60235
R Square .36282
Adjusted R Square .32893
Standard Error 6.15630

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	5	2028.63607	405.72721
Residual	94	3562.60393	37.90004
F =	10.70519	Signif F = .0000	

APPENDIX D

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
GOALS	2.401835	.577398	.386134	4.160	.0001
RELAX	1.754200	.629571	.243802	2.786	.0064
REVISE	-2.004462	.789691	-.229288	-2.538	.0128
SENTENCE	1.863543	.595786	.274495	3.128	.0023
STRESS	-1.825817	.574713	-.280314	-3.177	.0020
(Constant)	50.059529	2.958742		16.919	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	-.043186	-.048783	.766429	-.471	.6387
ALPHABET	.121987	.148294	.759174	1.446	.1515
ANTICIPA	.118970	.146883	.784477	1.432	.1555
ASK	-.088938	-.110633	.785961	-1.073	.2858
ASSOCIAT	.154867	.189421	.779853	1.860	.0660
BETTER	-.032543	-.034999	.737002	-.338	.7363
CHECK	.080331	.082417	.637689	.798	.4272
CLARIFY	.062523	.075044	.740098	.726	.4698
COMBINE	-.072833	-.087601	.771374	-.848	.3986
CONCENTR	-.124044	-.152912	.778721	-1.492	.1390
CORRECT	.062245	.075843	.759564	.734	.4651
CULTURE	.015203	.018113	.762135	.175	.8617
DAY	.039785	.036778	.544498	.355	.7235
DETAILS	.118637	.145964	.786549	1.423	.1581
DIRECT	-.016045	-.019750	.784274	-.190	.8493
ENCOURAG	-.029283	-.030189	.659860	-.291	.7715
ENVIRON	-.035757	-.042852	.776686	-.414	.6801
ERRORS	.063372	.071259	.730050	.689	.4926
FAMILIAR	-.058584	-.071576	.773270	-.692	.4906
FEELINGS	.011572	.014221	.786575	.137	.8912
FLASHCAR	-.097738	-.117723	.768091	-1.143	.2559
GENERAL	.086286	.104073	.771290	1.009	.3155
GESTURES	-.132221	-.160560	.785767	-1.569	.1201
GROUP	.065454	.079913	.768665	.773	.4414
GUESS	-.050195	-.062302	.785958	-.602	.5486
HELP	.029274	.035784	.785105	.345	.7306
IDIOM	.125583	.146664	.755338	1.430	.1561
IMAGE	-.041893	-.049880	.774168	-.482	.6312
IMITATE	.084711	.099175	.768806	.961	.3390
INITIATE	.079688	.095919	.765206	.929	.3551
JOURNAL	.053714	.062679	.784392	.606	.5462
LANGNOTE	-.050935	-.055986	.657630	-.541	.5900
LINES	.021326	.025934	.776281	.250	.8030
LOCATION	.038426	.046654	.770232	.450	.6535
LOOK	.117111	.131989	.786143	1.284	.2023
MISTAKES	.065621	.072398	.707808	.700	.4857
NEWWORDS	.036514	.043872	.770038	.423	.6729
NOTES	.044307	.052244	.735864	.505	.6151
NTRANSFE	.103279	.121653	.743807	1.182	.2402
OUTSIDE	.102077	.115392	.776904	1.120	.2655
PARTNER	.188995	.223012	.764483	2.206	.0298
PARTS	-.090987	-.107420	.741128	-1.042	.3001
PATTERNS	.005236	.006314	.786285	.061	.9516
PHYSICAL	-.051553	-.061893	.779352	-.598	.5513

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PRACTICE	.071014	.079419	.738604	.768	.4442
PREPARE	.003340	.003886	.720450	.037	.9702
PREVIEW	-.141078	-.160970	.753834	-1.573	.1192
PROGRESS	.015959	.018367	.733285	.177	.8598

APPENDIX D

PURPOSE	-.016141	-.019284	.764213	-.186	.8528
QUESTION	.084033	.103249	.772670	1.001	.3194
READP	.095968	.113415	.784816	1.101	.2738
READUN	.093449	.115636	.778269	1.123	.2645
REFERENC	+.070494	-.086296	.778221	-.835	.4057
REFRESH	-.016130	-.017533	.683463	-.169	.8661
REPEAT	.038497	.046017	.765045	.444	.6579
REPOINSIB	.073381	.083651	.737417	.810	.4203
REWARD	.049533	.052513	.716171	.507	.6133
RHYME	-.043958	-.053270	.780734	-.514	.6082
RISKS	.066426	.077337	.772729	.748	.4563
SCHEDULE	.207372	.193801	.545607	1.905	.0599
SESSIONS	.090780	.100812	.780667	.977	.3310
SEVERAL	.018195	.021363	.742521	.206	.8372
SIMILARD	-.156887	-.194495	.786483	-1.912	.0589
SKIM	.086235	.101837	.768298	.987	.3261
SLOW	-.016675	-.020125	.751872	-.194	.8465
SOUNDIMA	.119074	.148074	.781352	1.444	.1521
SUMMARY	.014907	.017769	.756698	.171	.8643
SYNONYM	.100047	.120317	.754896	1.169	.2455
TALK	.012288	.014386	.771120	.139	.8900
TELEVISI	.048284	.058264	.786353	.563	.5749
THINK	.094594	.112298	.782754	1.090	.2786
UNDERSTA	.069309	.083129	.750604	.804	.4232
VISUALIS	+.064230	-.076983	.777356	-.745	.4584
WORKS	.082986	.101568	.785353	.985	.3274
WRITEP	.175208	.208194	.775928	2.053	.0429

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number

6.. PARTNER

Multiple R .62810
R Square .39451
Adjusted R Square .35545
Standard Error 6.03344

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	6	2205.81914	367.63652
Residual	93	3385.42086	36.40237

F = 10.09925 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
GOALS	2.189164	.574026	.351944	3.814	.0002
PARTNER	1.418606	.643007	.188995	2.206	.0298
RELAX	1.666401	.618289	.231599	2.695	.0083
REVISE	-2.296394	.785161	-.262681	-2.925	.0043
SENTENCE	1.835875	.584030	.270419	3.143	.0022
STRESS	-1.874235	.563670	-.287747	-3.325	.0013
(Constant)	49.539434	2.909260		17.028	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	-.052167	-.060389	.747042	-.580	.5631
ALPHABET	.108607	.135044	.741695	1.307	.1944
ANTICIPA	.096559	.121196	.763800	1.171	.2446
ASK	-.085490	-.109070	.763955	-1.052	.2954
ASSOCIAT	.190074	.235230	.761230	2.321	.0225
BETTER	-.036428	-.040183	.727324	-.386	.7006
CHECK	.074387	.078260	.625187	.753	.4534
CLARIFY	.033792	.041076	.728146	.394	.6943
COMBINE	-.081015	-.099866	.751458	-.963	.3382

APPENDIX D

CONCENTR	-.097995	-.122376	.752234	-1.183	.2400
CORRECT	.041896	.052025	.743464	.500	.6185
CULTURE	.030477	.037128	.737572	.356	.7224
DAY	.041335	.039197	.544476	.376	.7076
DETAILS	.113194	.142798	.764446	1.384	.1698
DIRECT	-.043668	-.054539	.759615	-.524	.6016
ENCOURAG	-.042191	-.044544	.659416	-.428	.6699
ENVIRON	-.048147	-.059065	.756767	-.568	.5717
ERRORS	.041961	.048106	.716930	.462	.6452
FAMILIAR	-.035065	-.043562	.755587	-.418	.6768
FEELINGS	.002128	.002680	.764194	.026	.9796
FLASHCAR	-.107506	-.132660	.748763	-1.284	.2024
GENERAL	.070388	.086746	.752769	.835	.4058
GESTURES	-.114284	-.141584	.764290	-1.372	.1734
GROUP	.030332	.037230	.753655	.357	.7217
GUESS	-.027842	-.035165	.762473	-.337	.7365
HELP	-.010687	-.013084	.759347	-.126	.9004
IDIOM	.098847	.117047	.741181	1.130	.2612
IMAGE	-.002240	-.002673	.758107	-.026	.9796
IMITATE	.093830	.112566	.745797	1.087	.2801
INITIATE	.076393	.094314	.744907	.909	.3659
JOURNAL	.053232	.063721	.762368	.612	.5418
LANGNOTE	-.063784	-.071782	.646560	-.690	.4918
LINES	.015812	.019716	.755504	.189	.8504
LOCATION	.071657	.087954	.741758	.847	.3992
LOOK	.110488	.127667	.764185	1.235	.2201
MISTAKES	.039926	.044801	.697543	.430	.6681
NEWWORDS	.007419	.009030	.742135	.087	.9312
NOTES	.050474	.061021	.714466	.586	.5591
NTRANSFE	.159997	.187304	.706235	1.829	.0707
OUTSIDE	.106928	.123963	.754569	1.198	.2339
PARTS	-.090737	-.109892	.721331	-1.060	.2917
PATTERNS	.012132	.014997	.763884	.144	.8859
PHYSICAL	-.036584	-.044905	.759373	-.431	.6674
PRACTICE	-.043268	-.042537	.585201	-.408	.6840

Equation Number 1 Dependent Variable... INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PREPARE	-.014542	-.017282	.707228	-.166	.8687
PREVIEW	-.204427	-.231321	.743403	-2.281	.0249
PROGRESS	-.007890	-.009245	.720431	-.089	.9295
PURPOSE	-.032436	-.039606	.746522	-.380	.7047
QUESTION	.036275	.043911	.738686	.422	.6743
READP	.087122	.105500	.762093	1.018	.3115
READUN	.094115	.119468	.756454	1.154	.2514
REFERENC	-.036946	-.045537	.750313	-.437	.6630
REFRESH	-.014446	-.016108	.666704	-.155	.8775
REPEAT	.006724	.008124	.749991	.078	.9381
REPONSIB	.069522	.081284	.719012	.782	.4361
REWARD	.018114	.019473	.699770	.187	.8522
RHYME	-.041620	-.051736	.759151	-.497	.6204
RISKS	.036879	.043485	.755823	.417	.6773
SCHEDULE	.194110	.185776	.539706	1.813	.0730
SESSIONS	.074077	.084076	.760511	.809	.4204
SEVERAL	.041610	.049755	.715221	.478	.6339
SIMILARD	-.170759	-.216595	.764477	-2.128	.0360
SKIM	.079897	.096733	.748356	.932	.3537
SLOW	-.011245	-.013916	.730071	-.133	.8941
SOUNDIMA	.102965	.130755	.757254	1.265	.2091
SUMMARY	-.011500	-.013923	.741917	-.134	.8940
SYNONYM	.105084	.129593	.733128	1.254	.2132
TALK	.069853	.080669	.736886	.776	.4396
TELEVISI	.073357	.090046	.763154	.867	.3881
THINK	.111101	.134827	.759119	1.305	.1951
UNDERSTA	.059411	.072991	.732987	.702	.4845
VISUALIS	-.042466	-.051834	.751965	-.498	.6198
WORKS	.082613	.103724	.763220	1.000	.3198
WRITEP	.144370	.172675	.758977	1.681	.0961

APPENDIX D

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number
 7.. ASSOCIAT Associations

Multiple R .65423
 R Square .42802
 Adjusted R Square .38450
 Standard Error 5.89592

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	7	2393.14512	341.87787
Residual	92	3198.09488	34.76190

F = 9.83484 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
ASSOCIAT	1.352000	.582411	.190074	2.321	.0225
GOALS	2.274296	.562141	.365630	4.046	.0001
PARTNER	1.662304	.637060	.221462	2.609	.0106
RELAX	1.461116	.610634	.203069	2.393	.0188
REVISE	-2.502760	.772398	-.286287	-3.240	.0017
SENTENCE	1.687825	.574271	.248612	2.939	.0042
STRESS	-1.855061	.550885	-.284804	-3.367	.0011
(Constant)	46.326550	3.161951		14.651	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	-.021531	-.025340	.745728	-.242	.8095
ALPHABET	.099260	.126821	.737736	1.220	.2258
ANTICIPA	.088190	.113769	.760408	1.092	.2776
ASK	-.067327	-.087914	.760397	-.842	.4020
BETTER	-.039365	-.044672	.724093	-.427	.6707
CHECK	.080519	.087125	.623777	.834	.4063
CLARIFY	-.003269	-.004013	.719843	-.038	.9695
COMBINE	-.088212	-.111800	.747824	-1.073	.2860
CONCENTR	-.100862	-.129578	.748895	-1.247	.2157
CORRECT	.012728	.016063	.737306	.153	.8785
CULTURE	.008840	.011010	.732170	.105	.9166
DAY	.060999	.059334	.541181	.567	.5721
DETAILS	.087623	.112490	.761016	1.080	.2830
DIRECT	-.037527	-.048196	.756136	-.460	.6464
ENCOURAG	-.082424	-.088230	.655402	-.845	.4003
ENVIRON	-.091819	-.113378	.750982	-1.089	.2792
ERRORS	.033829	.039871	.713096	.381	.7044
FAMILIAR	-.022963	-.029290	.751680	-.280	.7805
FEELINGS	-.030102	-.038438	.761174	-.367	.7145
FLASHCAR	-.137425	-.172698	.743267	-1.673	.0978
GENERAL	.057260	.072425	.748697	.693	.4903
GESTURES	-.075098	-.093232	.760475	-.893	.3741
GROUP	.008809	.011053	.748998	.105	.9163
GUESS	-.029177	-.037914	.759200	-.362	.7182
HELP	-.059563	-.072889	.757668	-.697	.4875
IDIOM	.084746	.102970	.736771	.988	.3260
IMAGE	-.015753	-.019301	.755476	-.184	.8543
IMITATE	.081342	.100186	.741629	.961	.3393
INITIATE	.042723	.053338	.738150	.510	.6116
JOURNAL	.032900	.040295	.758520	.385	.7014
LANGNOTE	-.063895	-.073982	.644215	-.708	.4809
LINES	.007158	.009174	.751815	.088	.9305
LOCATION	.076121	.096105	.739059	.921	.3595
LOOK	.075099	.087712	.760429	.840	.4031

APPENDIX D

MISTAKES	.100994	.112620	.697392	1.081	.2825
NEWWORDS	.002804	.003511	.739442	.033	.9734
NOTES	.017607	.021576	.706122	.206	.8374
NTRANSFE	.145417	.174633	.701252	1.692	.0941
OUTSIDE	.053890	.061659	.746910	.589	.5571
PARTS	-.140849	-.171120	.711212	-1.657	.1010
PATTERNS	-.020137	-.025253	.760051	-.241	.8101
PHYSICAL	-.050451	-.063553	.756694	-.607	.5450
PRACTICE	-.070666	-.071037	.578007	-.679	.4986
PREPARE	-.003358	-.004099	.705637	-.039	.9689

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PREVIEW	-.252919	-.289117	.736372	-2.881	.0049
PROGRESS	.010754	.012909	.719195	.123	.9023
PURPOSE	-.059684	-.074288	.741015	-.711	.4791
QUESTION	.011798	.014575	.737429	.139	.8897
READP	.068054	.084348	.759369	.808	.4215
READUN	.083692	.109122	.752652	1.047	.2978
REFERENC	-.014801	-.018640	.748504	-.178	.8592
REFRESH	-.053012	-.059876	.665989	-.572	.5686
REPEAT	-.007131	-.008841	.745828	-.084	.9330
REPSIB	.034626	.040980	.710600	.391	.6965
REWARD	-.036061	-.038738	.660054	-.370	.7124
RHYME	-.016473	-.020877	.754667	-.199	.8426
RISKS	.042192	.051168	.752910	.489	.6262
SCHEDULE	.166240	.162438	.539403	1.570	.1198
SESSIONS	.055687	.064759	.756583	.619	.5374
SEVERAL	.004866	.005880	.706223	.056	.9554
SIMILARD	-.183999	-.239589	.761188	-2.354	.0207
SKIM	.073962	.092088	.744789	.882	.3800
SLOW	-.043804	-.055009	.722803	-.526	.6005
SOUNDIMA	.064052	.081482	.755787	.780	.4375
SUMMARY	-.026706	-.033166	.737437	-.317	.7523
SYNONYM	.095817	.121424	.729113	1.167	.2463
TALK	.063840	.075820	.733305	.725	.4701
TELEVISI	.011905	.014207	.757860	.136	.8925
THINK	.087476	.108302	.754687	1.039	.3014
UNDERSTA	.005484	.006647	.721375	.063	.9496
VISUALIS	-.049557	-.062194	.748345	-.594	.5537
WORKS	.056580	.072313	.760478	.692	.4909
WRITEP	.114062	.138294	.754047	1.332	.1862

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number

8.. PREVIEW

Multiple R .68980
R Square .47583
Adjusted R Square .42975
Standard Error 5.67506

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	8	2660.46941	332.55868
Residual	91	2930.77059	32.20627

F = 10.32590 Signif F = .0000

----- Variables in the Equation -----

APPENDIX D

Variable	B	SE B	Beta	T	Sig T
ASSOCIAT	1.663800	.570945	.233909	2.914	.0045
GOALS	2.560711	.550139	.411676	4.655	.0000
PARTNER	2.187929	.639761	.291489	3.420	.0009
PREVIEW	-2.007481	.696791	-.252919	-2.881	.0049
RELAX	1.354834	.588915	.188297	2.301	.0237
REVISE	-2.459183	.743618	-.281303	-3.307	.0014
SENTENCE	2.008758	.563871	.295884	3.562	.0006
STRESS	-1.683930	.533565	-.258530	-3.156	.0022
(Constant)	46.629804	3.045322		15.312	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	.008011	.009778	.725741	.093	.9263
ALPHABET	.129738	.171785	.719306	1.654	.1016
ANTICIPA	.091298	.123020	.735717	1.176	.2427
ASK	-.086850	-.118034	.736154	-1.128	.2625
BETTER	.022239	.025613	.695265	.243	.8085
CHECK	.052257	.058721	.596587	.558	.5782
CLARIFY	-.033156	-.042188	.689610	-.401	.6897
COMBINE	-.093081	-.123207	.723088	-1.178	.2420
CONCENTR	-.068936	-.091487	.729011	-.872	.3858
CORRECT	-.022761	-.029656	.706068	-.281	.7790
CULTURE	.015708	.020427	.710535	.194	.8467
DAY	.056155	.057051	.541037	.542	.5891
DETAILS	.057274	.076054	.732832	.724	.4712
DIRECT	-.018714	-.025018	.729610	-.237	.8129
ENCOURAG	-.045322	-.050175	.642429	-.477	.6348
ENVIRON	-.096560	-.124526	.726167	-1.191	.2369
ERRORS	.049734	.061106	.694846	.581	.5628
FAMILIAR	.027584	.035877	.712143	.341	.7342
FEELINGS	-.021557	-.028734	.736199	-.273	.7857
FLASHCAR	-.126218	-.165483	.721407	-1.592	.1149
GENERAL	.046014	.060721	.722922	.577	.5653
GESTURES	-.063391	-.082101	.735181	-.782	.4365
GROUP	.050889	.065666	.724323	.624	.5340
GUESS	-.020206	-.027405	.734976	-.260	.7954
HELP	-.028539	-.036156	.730141	-.343	.7322
IDIOM	.056282	.070891	.707224	.674	.5019
IMAGE	-.022112	-.028290	.731571	-.268	.7889
IMITATE	.032675	.041069	.707172	.390	.6975
INITIATE	.027767	.036135	.711730	.343	.7324
JOURNAL	.049527	.063211	.734793	.601	.5494
LANGNOTE	-.045794	-.055240	.631729	-.525	.6010
LINES	-.006882	-.009195	.725656	-.087	.9307
LOCATION	.023904	.030653	.702776	.291	.7718
LOOK	.082031	.100044	.735839	.954	.3427
MISTAKES	.113016	.131511	.679373	1.259	.2114
NEWWORDS	.003707	.004848	.715798	.046	.9634
NOTES	.032047	.040947	.688298	.389	.6984
NTRANSFE	.137922	.172934	.677964	1.666	.0993
OUTSIDE	.049592	.059264	.722358	.563	.5747
PARTS	-.117576	-.148424	.695154	-1.424	.1580
PATTERNS	-.012489	-.016352	.735583	-.155	.8771
PHYSICAL	-.062152	-.081682	.733067	-.778	.4389
PRACTICE	-.036107	-.037633	.569400	-.357	.7217
PREPARE	-.020384	-.025928	.679350	-.246	.8062

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PROGRESS	.001138	.001426	.694613	.014	.9892
PURPOSE	-.074616	-.096823	.714690	-.923	.3585

APPENDIX D

QUESTION	-.018899	-.024182	.712209	-.229	.8190
READP	.086321	.111437	.733495	1.064	.2903
READUN	.081940	.111600	.728124	1.065	.2895
REFERENC	.006926	.009071	.727299	.086	.9316
REFRESH	-.062842	-.074092	.665219	-.705	.4827
REPEAT	-.024508	-.031654	.719068	-.300	.7645
REPONSIB	.058514	.072010	.694228	.685	.4952
REWARD	.011272	.012455	.639933	.118	.9062
RHYME	.005630	.007418	.727616	.070	.9441
RISKS	.029337	.037110	.727028	.352	.7254
SCHEDULE	.137587	.139711	.536396	1.339	.1841
SESSIONS	.077291	.093555	.733552	.891	.3751
SEVERAL	-.017941	-.022545	.678186	-.214	.8311
SIMILARD	-.185957	-.252931	.736314	-2.480	.0150
SKIM	.052044	.067374	.717010	.641	.5234
SLOW	-.057651	-.075495	.696927	-.718	.4745
SOUNDIMA	.034042	.044824	.733761	.426	.6714
SUMMARY	.037237	.046600	.695507	.443	.6591
SYNONYM	.072513	.095454	.700349	.910	.3654
TALK	.062198	.077164	.709887	.734	.4647
TELEVISI	.052318	.064366	.728003	.612	.5421
THINK	.061025	.078384	.727012	.746	.4577
UNDERSTA	.004585	.005805	.698804	.055	.9562
VISUALIS	-.070454	-.092003	.721088	-.877	.3831
WORKS	.042268	.056315	.736095	.535	.5939
WRITEP	.111119	.140725	.729333	1.348	.1909

Equation Number 1 Dependent Variable.. INDRES

Variable(s) Entered on Step Number

9.. SIMILARD

Multiple R .71370
R Square .50936
Adjusted R Square .46030
Standard Error 5.52095

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	9	2847.96292	316.44032
Residual	90	2743.27708	30.48086

F = 10.38161 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
ASSOCIAT	1.756848	.556706	.246991	3.156	.0022
GOALS	2.572434	.535221	.413561	4.806	.0000
PARTNER	2.313977	.624460	.308282	3.706	.0004
PREVIEW	-2.022201	.677895	-.254774	-2.983	.0037
RELAX	1.188968	.576813	.165245	2.061	.0422
REVISE	-2.660793	.727977	-.304364	-3.655	.0004
SENTENCE	2.064755	.549024	.304133	3.761	.0003
SIMILARD	-1.270873	.512416	-.185957	-2.480	.0150
STRESS	-1.679883	.519078	-.257909	-3.236	.0017
(Constant)	51.874238	3.639847		14.252	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	.014247	.017966	.725722	.170	.8658
ALPHABET	.154418	.209860	.719244	2.025	.0459
ANTICIPA	.132910	.181564	.735710	1.742	.0850
ASK	-.074730	-.104740	.736080	-.994	.3231
BETTER	.018906	.022503	.695104	.212	.8323
CHECK	.049828	.057870	.596491	.547	.5858
CLARIFY	-.018764	-.024613	.689543	-.232	.8169

APPENDIX D

COMBINE	-.068572	-.092960	.723024	-.881	.3808
CONCENTR	-.061035	-.083648	.728996	-.792	.4305
CORRECT	-.027012	-.036368	.705947	-.343	.7322
CULTURE	-.004250	-.005682	.709978	-.054	.9574
DAY	.081422	.085088	.535805	.806	.4226
DETAILS	.116376	.153941	.732187	1.470	.1451
DIRECT	.013865	.018879	.729137	.178	.8590
ENCOURAG	-.004707	-.005300	.621976	-.050	.9602
ENVIRON	-.064163	-.084204	.726062	-.797	.4275
ERRORS	.055003	.069828	.694842	.660	.5107
FAMILIAR	.096434	.123371	.707713	1.173	.2440
FELINGS	-.008965	-.012324	.736128	-.116	.9077
FLASHCAR	-.122580	-.166085	.721381	-1.589	.1156
GENERAL	.067692	.091781	.722896	.870	.3869
GESTURES	-.037966	-.050368	.735031	-.476	.6354
GROUP	.007727	.010048	.723618	.095	.9247
GUESS	.024973	.034029	.734975	.321	.7488
HELP	-.027438	-.035929	.730077	-.339	.7353
IDIOM	.056613	.073705	.707174	.697	.4875
IMAGE	-.015514	-.020503	.731474	-.193	.8470
IMITATE	.059921	.077182	.706956	.730	.4671
INITIATE	.036633	.049225	.711730	.465	.6431
JOURNAL	.074054	.097004	.734785	.919	.3603
LANGNOTE	-.028801	-.035789	.631401	-.338	.7363
LINES	-.022239	-.030614	.725407	-.289	.7733
LOCATION	.057256	.074892	.702293	.709	.4805
LOOK	.076260	.096093	.735771	.911	.3649
MISTAKES	.127313	.152818	.679316	1.459	.1481
NEWWORDS	.012821	.017311	.715601	.163	.8706
NOTES	.018418	.024266	.687822	.229	.8194
NTRANSFE	.112223	.144050	.676419	1.373	.1731
OUTSIDE	.043671	.053921	.722243	.509	.6117
PARTS	-.070718	-.089167	.693126	-.845	.4006
PATTERNS	.071965	.089976	.735571	.852	.3963
PHYSICAL	-.064673	-.087844	.733021	-.832	.4077
PRACTICE	-.045820	-.049322	.568501	-.466	.6424
PREPARE	-.026693	-.035075	.679148	-.331	.7413

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PROGRESS	.024056	.030958	.694383	.292	.7708
PURPOSE	-.024913	-.032230	.713663	-.304	.7617
QUESTION	-.007069	-.009332	.709791	-.088	.9300
READP	.105053	.139593	.733339	1.330	.1869
READUN	.091834	.129105	.728116	1.228	.2226
REFERENC	.017675	.023890	.727294	.225	.8222
REFRESH	-.057398	-.069925	.656815	-.661	.5101
REPEAT	.025743	.033289	.718408	.314	.7541
REPONSIB	.036602	.046282	.693389	.437	.6631
REWARD	.001687	.001925	.638811	.018	.9856
RHYME	.022751	.030865	.727368	.291	.7715
RISKS	.048912	.063658	.727025	.602	.5489
SCHEDULE	.176094	.182984	.520585	1.756	.0825
SESSIONS	.095181	.118676	.733541	1.128	.2625
SEVERAL	-.026819	-.034801	.677892	-.329	.7433
SKIM	.069386	.092499	.716990	.876	.3832
SLOW	-.084953	-.113956	.695822	-1.082	.2821
SOUNDIMA	.081892	.108544	.733375	1.030	.3058
SUMMARY	.043575	.056337	.695313	.532	.5958
SYNONYM	.075100	.102172	.700327	.969	.3352
TALK	.089169	.113440	.709722	1.077	.2843
TELEVISI	.042254	.053667	.728003	.507	.6134
THINK	.071481	.094772	.727005	.898	.3715
UNDERSTA	.010706	.014004	.698802	.132	.8952
VISUALIS	-.037436	-.049736	.720881	-.470	.6397
WORKS	.092364	.123584	.735954	1.175	.2432
WRITEP	.091574	.119236	.729072	1.133	.2603

Equation Number 1 Dependent Variable.. INDRES

APPENDIX D

Variable(s) Entered on Step Number
10.. ALPHABET

Multiple R .72868
R Square .53097
Adjusted R Square .47827
Standard Error 5.42824

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	10	2968.78032	296.87803
Residual	89	2622.45968	29.46584

F = 10.07533 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
ALPHABET	.883015	.436076	.154418	2.025	.0459
ASSOCIAT	1.736436	.547451	.244121	3.172	.0021
GOALS	2.408272	.532442	.387169	4.523	.0000
PARTNER	2.269746	.614363	.302389	3.694	.0004
PREVIEW	-2.195720	.671998	-.276635	-3.267	.0015
RELAX	1.250777	.567949	.173835	2.202	.0302
REVISE	-2.463249	.722371	-.281768	-3.410	.0010
SENTENCE	1.986410	.541190	.292592	3.670	.0004
SIMILARD	-1.392053	.507354	-.203689	-2.744	.0073
STRESS	-1.713467	.510632	-.263065	-3.356	.0012
(Constant)	50.576697	3.635646		13.911	.0000

Equation Number 1 Dependent Variable.. INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
ADVANCE	.004816	.006201	.710499	.058	.9537
ANTICIPA	.120169	.167229	.719086	1.591	.1152
ASK	-.123966	-.171158	.716593	-1.630	.1067
BETTER	.013561	.016501	.694463	.155	.8773
CHECK	.033508	.039634	.590697	.372	.7107
CLARIFY	-.057327	-.074967	.683344	-.705	.4825
COMBINE	-.080677	-.111544	.708543	-1.053	.2952
CONCENTR	-.074799	-.104456	.713937	-.985	.3272
CORRECT	-.030239	-.041631	.691076	-.391	.6968
CULTURE	-.006465	-.008840	.694634	-.083	.9341
DAY	.058744	.062356	.528480	.586	.5593
DETAILS	.109716	.148296	.718401	1.407	.1630
DIRECT	.017355	.024164	.712858	.227	.8211
ENCOURAG	-.054853	-.061151	.582929	-.575	.5669
ENVIRON	-.056027	-.075100	.708090	-.706	.4817
ERRORS	.061894	.080298	.677596	.756	.4518
FAMILIAR	.089490	.116985	.698438	1.105	.2722
FEELINGS	-.017411	-.024443	.718824	-.229	.8191
FLASHCAR	-.106880	-.147218	.701321	-1.396	.1662
GENERAL	.036683	.049726	.711414	.467	.6416
GESTURES	-.035008	-.047493	.718182	-.446	.6567
GROUP	-.005261	-.006975	.713871	-.065	.9480
GUESS	.023103	.032195	.718075	.302	.7632
HELP	-.060404	-.079395	.708552	-.747	.4570
IDIOM	-2.685E-04	-.000335	.701938	-.003	.9975
IMAGE	4.257E-04	.000573	.716176	.005	.9957
IMITATE	-.009143	-.010963	.674320	-.103	.9183
INITIATE	.022087	.030220	.699025	.284	.7774
JOURNAL	.060829	.081198	.718498	.764	.4468
LANGNOTE	-.047848	-.060445	.624901	-.568	.5714
LINES	-.037721	-.052847	.711159	-.496	.6208
LOCATION	.034903	.046208	.688252	.434	.6654
LOOK	.045644	.057705	.719238	.542	.5890
MISTAKES	.150233	.183129	.657451	1.747	.0840

APPENDIX D

NEWWORDS	-.028781	-.038426	.687699	-.361	.7192
NOTES	.006882	.009249	.676287	.087	.9311
NTRANSFE	.102066	.133715	.665268	1.266	.2090
OUTSIDE	.047878	.060443	.705078	.568	.5715
PARTS	-.067080	-.086486	.676895	-.814	.4176
PATTERNS	.049720	.062969	.719165	.592	.5554
PHYSICAL	-.072849	-.101068	.715304	-.953	.3432
PRACTICE	-.052796	-.058089	.567787	-.546	.5866
PREPARE	-.040883	-.054738	.668829	-.514	.6084
PROGRESS	-.001392	-.001810	.685504	-.017	.9865

Equation Number 1 Dependent Variable... INDRES

----- Variables not in the Equation -----

Variable	Beta In	Partial	Min Toler	T	Sig T
PURPOSE	-.040003	-.052711	.700651	-.495	.6217
QUESTION	-.051004	-.066583	.691836	-.626	.5329
READP	.100419	.136415	.715978	1.292	.1998
READUN	.067188	.095036	.714805	.896	.3729
REFERENC	.013865	.019161	.711199	.180	.8577
REFRESH	-.071685	-.089030	.640888	-.839	.4040
REPEAT	-.006761	-.008763	.707587	-.082	.9347
REPONSIB	.018996	.024425	.682841	.229	.8192
REWARD	-.004453	-.005194	.638100	-.049	.9612
RHYME	.030852	.042750	.711858	.401	.6891
RISKS	.023772	.031238	.713649	.293	.7701
SCHEDULE	.148861	.156375	.500272	1.485	.1411
SESSIONS	.073447	.092775	.718081	.874	.3845
SEVERAL	-.063993	-.082999	.672429	-.781	.4367
SKIM	.049804	.067332	.704688	.633	.5283
SLOW	-.125593	-.168059	.688866	-1.599	.1133
SOUNDIMA	.059994	.080453	.713988	.757	.4510
SUMMARY	.006481	.008338	.692398	.078	.9378
SYNONYM	.042482	.057591	.692967	.541	.5898
TALK	.081752	.106260	.695566	1.002	.3189
TELEVISI	.022426	.028914	.718996	.271	.7868
THINK	.045192	.060337	.713896	.567	.5721
UNDERSTA	.007666	.010254	.684250	.096	.9236
VISUALIS	-.068686	-.091752	.709247	-.864	.3897
WORKS	.079887	.108947	.718382	1.028	.3067
WRITEP	.050637	.064770	.716796	.609	.5442

End Block Number 1 PIN = .050 Limits reached

APPENDIX D

METHOD 3: CORRELATIONS

1. Actual Result achieved in Oral Examination correlated with all strategies and measured using Pearson.
2. Actual Result achieved in Oral Examination correlated with all strategies and measured using Spearman's Rho

PART 1)

	INDRES	ADVANCE	ALPHABET	ANTICIPA	ASK	ASSOCIAT
INDRES	1.0000 (100) P= .	.0120 (100) P= .906	.1946 (100) P= .052	.0727 (100) P= .472	-.0983 (100) P= .331	.1676 (100) P= .095
ADVANCE	.0120 (100) P= .906	1.0000 (100) P= .	.1209 (100) P= .231	.0785 (100) P= .438	.1848 (100) P= .066	-.1033 (100) P= .307
ALPHABET	.1946 (100) P= .052	.1209 (100) P= .231	1.0000 (100) P= .	.1366 (100) P= .176	.2509 (100) P= .012	.0108 (100) P= .915
ANTICIPA	.0727 (100) P= .472	.0785 (100) P= .438	.1366 (100) P= .176	1.0000 (100) P= .	.1949 (100) P= .052	-.0209 (100) P= .837
ASK	-.0983 (100) P= .331	.1848 (100) P= .066	.2509 (100) P= .012	.1949 (100) P= .052	1.0000 (100) P= .	-.1001 (100) P= .322
ASSOCIAT	.1919 (100) P= .056	-.1033 (100) P= .307	.0108 (100) P= .915	-.0209 (100) P= .837	-.1001 (100) P= .322	1.0000 (100) P= .
BETTER	.0505 (100) P= .617	.3200 (100) P= .001	.1078 (100) P= .286	.0416 (100) P= .681	-.1378 (100) P= .171	.0626 (100) P= .536
CHECK	.3313 (100) P= .001	.0800 (100) P= .429	.1300 (100) P= .197	-.1181 (100) P= .242	.0474 (100) P= .639	-.0056 (100) P= .956
CLARIFY	.1376 (100) P= .172	-.0506 (100) P= .617	.2597 (100) P= .009	-.1308 (100) P= .194	.1048 (100) P= .299	.1223 (100) P= .225
COMBINE	.0333 (100) P= .742	.0254 (100) P= .802	.0710 (100) P= .483	-.0221 (100) P= .827	-.0023 (100) P= .982	.0452 (100) P= .655
CONCENTR	-.0679 (100) P= .502	.1661 (100) P= .099	.1122 (100) P= .267	-.0389 (100) P= .701	.1447 (100) P= .151	.0758 (100) P= .453
CORRECT	.1880 (100) P= .061	.0844 (100) P= .404	.0551 (100) P= .586	.0246 (100) P= .808	.0558 (100) P= .581	.1237 (100) P= .220
CULTURE	.1385 (100) P= .169	.1567 (100) P= .119	.0395 (100) P= .697	.2003 (100) P= .046	.0929 (100) P= .358	.1267 (100) P= .209
DAY	.2064 (100) P= .039	.1980 (100) P= .048	.1588 (100) P= .114	-.0136 (100) P= .893	-.0067 (100) P= .947	.0165 (100) P= .871
DETAILS	.1890 (100) P= .060	.0663 (100) P= .512	.0647 (100) P= .522	.1573 (100) P= .118	.1735 (100) P= .084	.1613 (100) P= .109

APPENDIX D

DIRECT	-.0592 (100) P= .559	.3024 (100) P= .002	.0072 (100) P= .944	.1687 (100) P= .093	.0413 (100) P= .683	-.0305 (100) P= .764
ENCOURAG	.1294 (100) P= .200	.2344 (100) P= .019	.2514 (100) P= .012	-.0191 (100) P= .851	.0900 (100) P= .373	.1878 (100) P= .361
ENVIRON	-.0268 (100) P= .791	-.0014 (100) P= .989	.0202 (100) P= .842	.0310 (100) P= .759	.0735 (100) P= .468	.1750 (100) P= .082
ERRORS	.2354 (100) P= .018	.1561 (100) P= .121	.0587 (100) P= .562	.0417 (100) P= .680	.0297 (100) P= .769	.0426 (100) P= .674
FAMILIAR	-.1603 (100) P= .111	.1320 (100) P= .190	.0393 (100) P= .698	.2037 (100) P= .042	-.0075 (100) P= .941	-.0307 (100) P= .762
FEELINGS	-.0321 (100) P= .751	.0714 (100) P= .480	.0859 (100) P= .395	.1091 (100) P= .280	.0162 (100) P= .873	.1663 (100) P= .098
FLASHCAR	-.0439 (100) P= .664	.0727 (100) P= .472	-.0259 (100) P= .798	.1117 (100) P= .269	-.1008 (100) P= .318	.1124 (100) P= .265
GENERAL	.1916 (100) P= .056	.1699 (100) P= .091	.2343 (100) P= .019	.3086 (100) P= .002	.1078 (100) P= .286	.0622 (100) P= .539
GESTURES	-.2091 (100) P= .037	.0407 (100) P= .688	-.0321 (100) P= .751	.2675 (100) P= .007	.2664 (100) P= .007	-.2141 (100) P= .032
GOALS	.3436 (100) P= .000	.2939 (100) P= .003	.1745 (100) P= .082	.0235 (100) P= .817	-.0490 (100) P= .628	-.0354 (100) P= .727
GROUP	.1709 (100) P= .089	.0797 (100) P= .430	.1042 (100) P= .302	.0914 (100) P= .366	.1310 (100) P= .194	.0876 (100) P= .386
GUESS	-.0509 (100) P= .615	.0542 (100) P= .592	.0349 (100) P= .730	.4626 (100) P= .000	.0845 (100) P= .403	.0083 (100) P= .934
HELP	-.0244 (100) P= .810	-.0640 (100) P= .527	.2227 (100) P= .026	.1304 (100) P= .196	.1566 (100) P= .120	.1852 (100) P= .065
IDIOMS	.7219 (62) P= .000	.0364 (62) P= .779	.2194 (62) P= .087	-.1010 (62) P= .435	-.0805 (62) P= .534	.3336 (62) P= .008
IMAGE	-.0820 (100) P= .417	.1382 (100) P= .170	-.0796 (100) P= .431	.0044 (100) P= .965	-.0891 (100) P= .378	.1250 (100) P= .215
IMITATE	.1046 (100) P= .301	.2274 (100) P= .023	.3977 (100) P= .000	.1705 (100) P= .090	.2061 (100) P= .040	.0587 (100) P= .562
INITIATE	.1596 (100) P= .113	.2853 (100) P= .004	.1223 (100) P= .225	.1001 (100) P= .322	-.0397 (100) P= .695	.1836 (100) P= .068
JOURNAL	.0296 (100) P= .770	.0333 (100) P= .742	.1446 (100) P= .151	-.0269 (100) P= .791	-.2015 (100) P= .044	.1212 (100) P= .230

APPENDIX D

	INDRES	ADVANCE	ALPHABET	ANTICIPA	ASK	ASSOCIAT
LANGNOTE	.0983 (100) P= .331	.1080 (100) P= .285	.1650 (100) P= .101	.1525 (100) P= .130	.0877 (100) P= .386	-.0171 (100) P= .866
LINES	.1349 (100) P= .181	.0570 (100) P= .573	.1227 (100) P= .224	.0269 (100) P= .791	.0686 (100) P= .497	.0768 (100) P= .447
LOCATION	.0673 (100) P= .506	.2630 (100) P= .008	.1366 (100) P= .175	.1725 (100) P= .086	.1082 (100) P= .284	-.0193 (100) P= .849
LOOK	.2106 (100) P= .035	.2205 (100) P= .027	.2014 (100) P= .045	.0218 (100) P= .830	-.0949 (100) P= .348	.2328 (100) P= .020
MISTAKES	.1989 (100) P= .047	.2570 (100) P= .010	-.0070 (100) P= .945	.0711 (100) P= .482	-.0111 (100) P= .913	-.2268 (100) P= .023
NEWORDS	.0139 (100) P= .891	-.1271 (100) P= .208	.2437 (100) P= .015	.2543 (100) P= .011	.1182 (100) P= .242	-.0213 (100) P= .833
NOTES	.0321 (100) P= .751	.1369 (100) P= .174	.1008 (100) P= .318	.1394 (100) P= .167	.1331 (100) P= .187	.1379 (100) P= .171
NTRANSFE	.2157 (100) P= .031	.1906 (100) P= .057	.0629 (100) P= .534	.1979 (100) P= .048	.0335 (100) P= .741	.1040 (100) P= .303
OUTSIDE	.1857 (100) P= .064	.1974 (100) P= .049	.0184 (100) P= .856	+.0219 (100) P= .829	-.2525 (100) P= .011	.3168 (100) P= .001
PARTNER	.2406 (100) P= .016	.1613 (100) P= .109	.1018 (100) P= .314	.1166 (100) P= .248	-.0377 (100) P= .709	-.1246 (100) P= .217
PARTS	.0438 (100) P= .666	.0203 (100) P= .841	.0671 (100) P= .507	.1437 (100) P= .154	-.0258 (100) P= .799	.2049 (100) P= .041
PATTERNS	.0886 (100) P= .381	.0796 (100) P= .431	.2020 (100) P= .044	.0288 (100) P= .776	.1903 (100) P= .058	.1811 (100) P= .071
PHYSICAL	-.1049 (100) P= .299	.1760 (100) P= .080	.0453 (100) P= .654	.1697 (100) P= .091	.0073 (100) P= .942	.1047 (100) P= .300
PRACTICE	.1528 (100) P= .129	.0701 (100) P= .488	.1410 (100) P= .162	.0159 (100) P= .375	.0107 (100) P= .916	.0480 (100) P= .635
PREPARE	.1186 (100) P= .240	.1997 (100) P= .046	.1484 (100) P= .141	.2070 (100) P= .039	.1573 (100) P= .118	-.0586 (100) P= .562
PREVIEW	-.0160 (100) P= .874	.2447 (100) P= .014	.1993 (100) P= .047	.0589 (100) P= .560	-.0931 (100) P= .357	.1685 (100) P= .094
PROGRESS	.1173 (100) P= .245	.1458 (100) P= .148	.1988 (100) P= .047	-.0985 (100) P= .329	-.0746 (100) P= .461	-.0918 (100) P= .364

APPENDIX D

PURPOSE	.1389 (100) P= .168	.1134 (100) P= .261	.1461 (100) P= .147	.1440 (100) P= .153	-.0123 (100) P= .903	.1439 (100) P= .153
QUESTION	.0264 (100) P= .794	-.0164 (100) P= .872	.2274 (100) P= .023	.2980 (100) P= .003	.1013 (100) P= .316	.0772 (100) P= .445
READP	.1640 (100) P= .103	.0396 (100) P= .695	.0724 (100) P= .474	.1773 (100) P= .078	-.1918 (100) P= .056	.1219 (100) P= .227
READUN	.1558 (100) P= .122	.0254 (100) P= .802	.1877 (100) P= .062	.2492 (100) P= .012	-.0391 (100) P= .700	.0256 (100) P= .800
REFERENC	-.0341 (100) P= .737	.1614 (100) P= .109	.0374 (100) P= .712	.1332 (100) P= .186	.0788 (100) P= .436	-.0265 (100) P= .793
REFRESH	-.0005 (100) P= .996	-.0925 (100) P= .360	.0725 (100) P= .473	-.0279 (100) P= .783	.0593 (100) P= .558	.2096 (100) P= .036
RELAX	.3765 (100) P= .000	.1184 (100) P= .241	.0029 (100) P= .977	-.1233 (100) P= .222	-.0549 (100) P= .588	.1316 (100) P= .192
REPEAT	.0677 (100) P= .503	-.0757 (100) P= .454	.2260 (100) P= .024	.1879 (100) P= .061	.1087 (100) P= .282	.0304 (100) P= .764
REPONSIB	.2331 (100) P= .020	.3016 (100) P= .002	.1508 (100) P= .134	.1153 (100) P= .253	.0174 (100) P= .863	.1941 (100) P= .053
REVISE	-.0730 (100) P= .470	.2496 (100) P= .012	-.0338 (100) P= .739	-.0380 (100) P= .708	-.0533 (100) P= .598	.1040 (100) P= .303
REWARD	-.0888 (100) P= .379	.2079 (100) P= .038	.0345 (100) P= .733	.0506 (100) P= .617	-.0957 (100) P= .344	.2203 (100) P= .028
RHYME	-.1497 (100) P= .137	-.0229 (100) P= .821	-.0461 (100) P= .649	.0522 (100) P= .606	-.0854 (100) P= .398	-.1194 (100) P= .237
RISKS	.1852 (100) P= .065	.0788 (100) P= .436	.2096 (100) P= .036	.1707 (100) P= .089	.1585 (100) P= .115	-.0369 (100) P= .716
SCHEDULE	.1494 (100) P= .138	.3447 (100) P= .000	.1189 (100) P= .239	.0825 (100) P= .414	.0344 (100) P= .734	.1504 (100) P= .135
SENTENCE	.2717 (100) P= .006	.2097 (100) P= .036	.0908 (100) P= .369	.0116 (100) P= .909	.0582 (100) P= .565	.0992 (100) P= .326
SESSIONS	.0915 (100) P= .365	.3015 (100) P= .002	.1886 (100) P= .060	.1449 (100) P= .150	.0542 (100) P= .592	.0728 (100) P= .472
SEVERAL	.1649 (100) P= .101	.0286 (100) P= .778	.2078 (100) P= .038	-.0363 (100) P= .720	.1227 (100) P= .224	.2055 (100) P= .040
SIMILARD	-.1675 (100) P= .096	-.0017 (100) P= .987	.1312 (100) P= .193	.2163 (100) P= .031	.0712 (100) P= .481	.0210 (100) P= .836

APPENDIX D

SKIM	.2196 (100) P= .028	.2171 (100) P= .030	.1641 (100) P= .103	.0969 (100) P= .337	.2310 (100) P= .021	.0605 (100) P= .550
SLOW	.0952 (100) P= .346	-.1135 (100) P= .261	.2047 (100) P= .041	-.0626 (100) P= .536	.0904 (100) P= .371	.1366 (100) P= .175
SOUNDIMA	.0788 (100) P= .436	.0179 (100) P= .860	.1402 (100) P= .164	.2346 (100) P= .019	.0059 (100) P= .953	.2095 (100) P= .036
STRESS	-.1656 (100) P= .100	.3460 (100) P= .000	.0959 (100) P= .343	.0886 (100) P= .381	.0245 (100) P= .809	-.0047 (100) P= .963
SUMMARY	.1001 (100) P= .322	-.0085 (100) P= .933	.2820 (100) P= .004	.0270 (100) P= .790	.0753 (100) P= .456	.0772 (100) P= .445
SYNONYM	.1936 (100) P= .054	.2540 (100) P= .011	.2495 (100) P= .012	.1996 (100) P= .046	.1147 (100) P= .256	.0507 (100) P= .616
TALK	-.0990 (100) P= .327	-.1105 (100) P= .274	.0512 (100) P= .613	-.0657 (100) P= .516	.1121 (100) P= .267	.0263 (100) P= .795
TELEVISI	.1175 (100) P= .244	.1853 (100) P= .065	.1333 (100) P= .186	-.0848 (100) P= .401	-.0278 (100) P= .784	.3754 (100) P= .000
THINK	.1598 (100) P= .112	.1402 (100) P= .164	.1598 (100) P= .112	.0548 (100) P= .588	-.0534 (100) P= .598	.1783 (100) P= .076
UNDERSTA	.1604 (100) P= .111	.1261 (100) P= .211	.0720 (100) P= .477	.2354 (100) P= .018	.0867 (100) P= .391	.2308 (100) P= .021
VISUALIS	.0539 (100) P= .595	.1374 (100) P= .173	.1757 (100) P= .080	.0294 (100) P= .771	.1254 (100) P= .214	.0799 (100) P= .429
WORKS	.1457 (100) P= .148	.0177 (100) P= .861	.0939 (100) P= .353	.2537 (100) P= .011	.1068 (100) P= .290	.1678 (100) P= .095
WRITEP	.1852 (100) P= .065	.1341 (100) P= .183	.3000 (100) P= .002	.2457 (100) P= .014	.0234 (100) P= .817	.1361 (100) P= .177

(Coefficient / (Cases) / 2-tailed Significance)

" ." is printed if a coefficient cannot be computed

PART 2)

ADVANCE .0107
N(100)
Sig .916

ALPHABET .2251 .1359
N(100) N(100)
Sig .024 Sig .177

ANTICIPA .1011 .0568 .1440
N(100) N(100) N(100)
Sig .317 Sig .574 Sig .153

APPENDIX D

ASK	.1142 N(100) Sig .258	.1632 N(100) Sig .105	.2541 N(100) Sig .011	.2159 N(100) Sig .031		
ASSOCIAT	.1471 N(100) Sig .144	.1010 N(100) Sig .317	.0081 N(100) Sig .936	-.0178 N(100) Sig .860	-.1122 N(100) Sig .267	
BETTER	.0496 N(100) Sig .624	.3394 N(100) Sig .001	.1392 N(100) Sig .167	.0738 N(100) Sig .465	-.1447 N(100) Sig .151	.0719 N(100) Sig .477
CHECK	.2597 N(100) Sig .009	.0808 N(100) Sig .424	.0795 N(100) Sig .432	-.1162 N(100) Sig .250	.0399 N(100) Sig .694	-.0367 N(100) Sig .717
CLARIFY	.1405 N(100) Sig .163	.0205 N(100) Sig .839	.2740 N(100) Sig .006	-.1379 N(100) Sig .171	.0363 N(100) Sig .720	.1178 N(100) Sig .243
COMBINE	-.0479 N(100) Sig .636	.0385 N(100) Sig .704	.0572 N(100) Sig .572	-.0178 N(100) Sig .860	-.0047 N(100) Sig .963	.0075 N(100) Sig .941
CONCENTR	-.0756 N(100) Sig .455	.1488 N(100) Sig .140	.1075 N(100) Sig .287	-.0213 N(100) Sig .833	.1801 N(100) Sig .073	.0654 N(100) Sig .518
CORRECT	.1849 N(100) Sig .065	.0778 N(100) Sig .441	.0560 N(100) Sig .580	.0262 N(100) Sig .796	.0201 N(100) Sig .843	.1219 N(100) Sig .227
CULTURE	.1542 N(100) Sig .125	.1574 N(100) Sig .118	.0480 N(100) Sig .635	.1995 N(100) Sig .047	.0785 N(100) Sig .438	.0998 N(100) Sig .323
DAY	.2497 N(100) Sig .012	.2316 N(100) Sig .020	.2064 N(100) Sig .039	.0136 N(100) Sig .893	-.0612 N(100) Sig .545	.0407 N(100) Sig .688
DETAILS	.1158 N(100) Sig .251	.0927 N(100) Sig .359	.0259 N(100) Sig .798	.2220 N(100) Sig .026	.1789 N(100) Sig .075	.0964 N(100) Sig .340
DIRECT	-.0455 N(100) Sig .653	.3043 N(100) Sig .002	-.0016 N(100) Sig .987	.1744 N(100) Sig .083	.0568 N(100) Sig .575	-.0340 N(100) Sig .737
ENCOURAG	.0990 N(100) Sig .327	.2338 N(100) Sig .019	.2566 N(100) Sig .010	-.0116 N(100) Sig .909	.0856 N(100) Sig .397	.1791 N(100) Sig .075
ERRORS	.1994 N(100) Sig .047	.1316 N(100) Sig .192	.0223 N(100) Sig .826	.0572 N(100) Sig .572	-.0028 N(100) Sig .978	.0238 N(100) Sig .814
ENVIRON	-.0463 N(100) Sig .647	-.0078 N(100) Sig .939	-.0401 N(100) Sig .692	.0953 N(100) Sig .346	.0910 N(100) Sig .368	.1500 N(100) Sig .136
FAMILIAR	.1003 N(100) Sig .321	.1247 N(100) Sig .216	.0930 N(100) Sig .357	.2131 N(100) Sig .033	.0172 N(100) Sig .865	-.0451 N(100) Sig .656
FEELINGS	.0198 N(100) Sig .845	.0496 N(100) Sig .624	.0732 N(100) Sig .469	.1055 N(100) Sig .296	.0396 N(100) Sig .696	.1855 N(100) Sig .065
FLASHCAR	-.0684 N(100) Sig .499	.0687 N(100) Sig .497	-.0037 N(100) Sig .971	.1247 N(100) Sig .216	-.0746 N(100) Sig .461	.1642 N(100) Sig .103

APPENDIX D

GENERAL	.2037	.1684	.2299	.2990	.0998	.0574
	N(100)					
	Sig .042	Sig .094	Sig .021	Sig .003	Sig .323	Sig .571
GESTURES	-.2458	.0445	-.0599	.2496	.2813	-.1871
	N(100)					
	Sig .014	Sig .661	Sig .554	Sig .012	Sig .005	Sig .062
GOALS	.3003	.2832	.1505	.0308	-.0785	-.0111
	N(100)					
	Sig .002	Sig .004	Sig .135	Sig .761	Sig .438	Sig .913
GROUP	.1682	.0973	.1122	.0842	.0744	.0425
	N(100)					
	Sig .094	Sig .335	Sig .266	Sig .405	Sig .462	Sig .675
GUESS	-.0387	.0436	.0348	.4466	.1298	-.0290
	N(100)					
	Sig .702	Sig .667	Sig .731	Sig .000	Sig .198	Sig .775
HELP	.0005	-.0484	.1994	.1632	.1881	.1621
	N(100)					
	Sig .996	Sig .633	Sig .047	Sig .105	Sig .061	Sig .107
IDIOMS	.6917	.0158	.2173	-.0463	-.0644	.3055
	N(62)					
	Sig .000	Sig .903	Sig .090	Sig .721	Sig .619	Sig .016
IMAGE	-.1055	.1121	-.0617	-.0154	-.0881	.1317
	N(100)					
	Sig .296	Sig .267	Sig .542	Sig .979	Sig .383	Sig .192
IMITATE	.1140	.2002	.3779	.1902	.2085	.0867
	N(100)					
	Sig .259	Sig .046	Sig .000	Sig .058	Sig .037	Sig .391
INITIATE	.1499	.2872	.1210	.1100	-.0302	.1554
	N(100)					
	Sig .137	Sig .004	Sig .231	Sig .276	Sig .766	Sig .123
JOURNAL	.0194	.0491	.1457	-.0125	-.1967	.1206
	N(100)					
	Sig .848	Sig .628	Sig .148	Sig .902	Sig .050	Sig .232
LANGNOTE	.1199	.1188	.1597	.1653	.0794	-.0453
	N(100)					
	Sig .235	Sig .239	Sig .112	Sig .100	Sig .432	Sig .654
LINES	.1238	.1137	.2194	.0759	.0547	.0311
	N(100)					
	Sig .220	Sig .260	Sig .028	Sig .453	Sig .589	Sig .758
LOCATION	.0666	.2726	.1143	.1700	.1111	-.0189
	N(100)					
	Sig .510	Sig .006	Sig .258	Sig .091	Sig .271	Sig .852
LOOK	.1598	.2251	.2010	.0282	-.1460	.2499
	N(100)					
	Sig .112	Sig .024	Sig .045	Sig .780	Sig .147	Sig .012
MISTAKES	.1803	.2633	.0129	.0938	-.0266	-.1944
	N(100)					
	Sig .073	Sig .008	Sig .899	Sig .353	Sig .793	Sig .053
NEWWORDS	.0031	-.0899	.3074	.2489	.0798	.0343
	N(100)					
	Sig .976	Sig .374	Sig .002	Sig .013	Sig .430	Sig .734
NOTES	-.0326	.1249	.0792	.1457	.1449	.1933
	N(100)					
	Sig .747	Sig .216	Sig .434	Sig .148	Sig .150	Sig .054

APPENDIX D

NTRANSFE	.1853 N(100) Sig .065	.1582 N(100) Sig .116	.0602 N(100) Sig .552	.2013 N(100) Sig .045	.0438 N(100) Sig .665	.1264 N(100) Sig .210
OUTSIDE	.1880 N(100) Sig .061	.1485 N(100) Sig .140	.0053 N(100) Sig .958	.0270 N(100) Sig .790	.2535 N(100) Sig .011	.3065 N(100) Sig .002
PARTNER	.2690 N(100) Sig .007	.1459 N(100) Sig .147	.1820 N(100) Sig .070	.1244 N(100) Sig .217	-.0625 N(100) Sig .537	-.0935 N(100) Sig .355
PARTS	.0100 N(100) Sig .922	.0338 N(100) Sig .739	.0349 N(100) Sig .730	.1386 N(100) Sig .169	.0253 N(100) Sig .803	.1749 N(100) Sig .082
PATTERNS	.0735 N(100) Sig .467	.1035 N(100) Sig .305	.1760 N(100) Sig .080	-.0048 N(100) Sig .962	.1304 N(100) Sig .196	.2247 N(100) Sig .025
PHYSICAL	-.0845 N(100) Sig .403	.1447 N(100) Sig .151	.0497 N(100) Sig .623	.1660 N(100) Sig .099	.0253 N(100) Sig .802	.0956 N(100) Sig .344
PRACTICE	.1164 N(100) Sig .249	.0668 N(100) Sig .509	.1363 N(100) Sig .176	.0120 N(100) Sig .905	-.0384 N(100) Sig .705	.0904 N(100) Sig .371
PREPARE	.1296 N(100) Sig .199	.2207 N(100) Sig .027	.1027 N(100) Sig .309	.2077 N(100) Sig .038	.1304 N(100) Sig .196	-.1495 N(100) Sig .138
PREVIEW	-.0189 N(100) Sig .852	.2652 N(100) Sig .008	.2134 N(100) Sig .033	.0205 N(100) Sig .839	.1478 N(100) Sig .142	.1954 N(100) Sig .051
PROGRESS	.1606 N(100) Sig .110	.1391 N(100) Sig .168	.1884 N(100) Sig .060	-.0540 N(100) Sig .593	.0587 N(100) Sig .562	.0379 N(100) Sig .708
PURPOSE	.1000 N(100) Sig .322	.1087 N(100) Sig .282	.1088 N(100) Sig .281	.1067 N(100) Sig .291	.0367 N(100) Sig .717	.1167 N(100) Sig .248
QUESTION	.0815 N(100) Sig .420	-.0179 N(100) Sig .859	.1964 N(100) Sig .050	.2867 N(100) Sig .004	.0979 N(100) Sig .333	.0837 N(100) Sig .408
READP	.1350 N(100) Sig .180	.0664 N(100) Sig .511	.0838 N(100) Sig .407	.1613 N(100) Sig .109	-.2147 N(100) Sig .032	.1645 N(100) Sig .102
READUN	.1645 N(100) Sig .102	.0127 N(100) Sig .900	.1878 N(100) Sig .061	.2593 N(100) Sig .009	-.0265 N(100) Sig .793	.0278 N(100) Sig .784
REFERENC	-.0221 N(100) Sig .827	.1743 N(100) Sig .083	-.0399 N(100) Sig .694	.1262 N(100) Sig .211	.1296 N(100) Sig .199	-.0507 N(100) Sig .616
REFRESH	.0236 N(100) Sig .815	-.0822 N(100) Sig .416	.0314 N(100) Sig .756	.0132 N(100) Sig .897	.0481 N(100) Sig .635	.2200 N(100) Sig .028
RELAX	.3160 N(100) Sig .001	.1317 N(100) Sig .191	.0293 N(100) Sig .772	-.0636 N(100) Sig .529	-.0582 N(100) Sig .566	.0850 N(100) Sig .400
REPEAT	.0968 N(100) Sig .338	-.0702 N(100) Sig .488	.2239 N(100) Sig .025	.1919 N(100) Sig .056	.0979 N(100) Sig .333	.0759 N(100) Sig .453

APPENDIX D

REPOINSIB	.2014 N(100) Sig .045	.2969 N(100) Sig .003	.1526 N(100) Sig .130	.0949 N(100) Sig .348	.0041 N(100) Sig .968	.1726 N(100) Sig .086
REVISE	-.0662 N(100) Sig .513	.2814 N(100) Sig .005	-.0137 N(100) Sig .893	-.0010 N(100) Sig .992	-.0337 N(100) Sig .739	.0754 N(100) Sig .456
REWARD	-.0448 N(100) Sig .658	.2083 N(100) Sig .038	.0931 N(100) Sig .357	.0234 N(100) Sig .817	-.1345 N(100) Sig .182	.2409 N(100) Sig .016
RHYME	-.1293 N(100) Sig .200	.0622 N(100) Sig .539	.0331 N(100) Sig .744	.0868 N(100) Sig .390	-.1097 N(100) Sig .277	-.1354 N(100) Sig .179
RISKS	.1734 N(100) Sig .084	.0550 N(100) Sig .587	.1996 N(100) Sig .047	.1493 N(100) Sig .138	.1015 N(100) Sig .315	-.0098 N(100) Sig .923
SCHEDULE	.1090 N(100) Sig .280	.3278 N(100) Sig .001	.1260 N(100) Sig .212	.0803 N(100) Sig .427	.0489 N(100) Sig .629	.1403 N(100) Sig .164
SENTENCE	.2476 N(100) Sig .013	.1796 N(100) Sig .074	-.0926 N(100) Sig .360	.0141 N(100) Sig .889	.0336 N(100) Sig .740	.0962 N(100) Sig .341
SESSIONS	.0981 N(100) Sig .331	.3182 N(100) Sig .001	.1984 N(100) Sig .048	.1574 N(100) Sig .118	.0208 N(100) Sig .837	.1111 N(100) Sig .271
SEVERAL	.1198 N(100) Sig .235	.0258 N(100) Sig .799	.1293 N(100) Sig .200	-.0502 N(100) Sig .620	.0746 N(100) Sig .461	.1993 N(100) Sig .047
SIMILARD	-.1635 N(100) Sig .104	-.0185 N(100) Sig .855	.1300 N(100) Sig .197	.1920 N(100) Sig .056	.0705 N(100) Sig .486	.0874 N(100) Sig .387
SKIM	.1309 N(100) Sig .194	.2417 N(100) Sig .015	.0857 N(100) Sig .396	.0990 N(100) Sig .327	.0812 N(100) Sig .422	.0513 N(100) Sig .612
SLOW	.1034 N(100) Sig .306	-.0691 N(100) Sig .494	.2243 N(100) Sig .025	-.0797 N(100) Sig .430	.0848 N(100) Sig .401	.0933 N(100) Sig .356
SOUNDIMA	.1401 N(100) Sig .164	-.0065 N(100) Sig .949	.1168 N(100) Sig .247	.2245 N(100) Sig .025	-.0460 N(100) Sig .650	.2028 N(100) Sig .043
STRESS	-.1059 N(100) Sig .294	.3502 N(100) Sig .000	.1284 N(100) Sig .203	.0793 N(100) Sig .433	-.0531 N(100) Sig .600	.0836 N(100) Sig .408
SUMMARY	.1319 N(100) Sig .191	-.0284 N(100) Sig .779	.2736 N(100) Sig .006	.0349 N(100) Sig .730	.0688 N(100) Sig .496	.1098 N(100) Sig .277
SYNONYM	.2039 N(100) Sig .042	.2221 N(100) Sig .026	.2174 N(100) Sig .030	.1920 N(100) Sig .056	.1617 N(100) Sig .108	.0062 N(100) Sig .951
TALK	-.0980 N(100) Sig .332	-.1142 N(100) Sig .258	.0349 N(100) Sig .730	-.0420 N(100) Sig .678	.1188 N(100) Sig .239	.0645 N(100) Sig .524
TELEVISI	.1471 N(100) Sig .144	.2100 N(100) Sig .036	.1324 N(100) Sig .189	-.0709 N(100) Sig .483	-.0224 N(100) Sig .825	.3521 N(100) Sig .000

APPENDIX D

THINK	.1284	.1287	.1402	.0652	.0072	.1828
	N(100)					
	Sig .203	Sig .202	Sig .164	Sig .520	Sig .944	Sig .069
UNDERSTA	.1235	.1167	.0873	.2082	.0602	.2254
	N(100)					
	Sig .221	Sig .248	Sig .388	Sig .038	Sig .552	Sig .024
VISUALIS	.0421	.1585	.1401	.0508	.1203	.0774
	N(100)					
	Sig .677	Sig .115	Sig .165	Sig .615	Sig .233	Sig .444
WORKS	.1112	.0565	.0445	.2128	.0496	.1494
	N(100)					
	Sig .271	Sig .577	Sig .660	Sig .034	Sig .624	Sig .138
WRITEP	.1963	.1226	.2899	.2122	.0463	.1534
	N(100)					
	Sig .050	Sig .224	Sig .003	Sig .034	Sig .647	Sig .127
	INDRES	ADVANCE	ALPHABET	ANTICIPA	ASK	ASSOCIAT

APPENDIX D

METHOD 4: ANALYSIS OF VARIANCE

Average Frequency of Use of Each Strategy by Category Achieved in Oral Presentation

- - Description of Subpopulations - -

Summaries of ADVANCE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.7700	1.1269	100
INDRESC	1.00		3.0000	.	1
INDRESC	2.00		2.7429	1.1966	35
INDRESC	3.00		2.8421	1.1514	38
INDRESC	4.00		2.6923	1.0495	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable ADVANCE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000	.	.0000	1
2.00		2.7429	1.1966	48.6857	35
3.00		2.8421	1.1514	49.0526	38
4.00		2.6923	1.0495	27.5385	26
Within Groups Total		2.7700	1.1424	125.2768	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.4332	3	.1444	.1107	.9537
Within Groups	125.2768	96	1.3050		
Eta = .0587		Eta Squared = .0034			

- - Description of Subpopulations - -

Summaries of ALPHABET
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.5100	1.3142	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		2.8571	1.3316	35
INDRESC	3.00		2.3421	1.4003	38
INDRESC	4.00		2.3077	1.1232	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable ALPHABET
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		2.8571	1.3316	60.2857	35
3.00		2.3421	1.4003	72.5526	38
4.00		2.3077	1.1232	31.5385	26

Within Groups Total		2.5100	1.3085	164.3768	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	6.6132	3	2.2044	1.2874	.2832
Within Groups	164.3768	96	1.7123		
Eta = .1967 Eta Squared = .0387					

- - Description of Subpopulations - -

Summaries of ANTICIPA
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			3.1000	1.1764	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		3.3429	1.1868	35
INDRESC	3.00		2.9211	1.1942	38
INDRESC	4.00		3.0385	1.1482	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable ANTICIPA
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		3.3429	1.1868	47.8857	35
3.00		2.9211	1.1942	52.7632	38
4.00		3.0385	1.1482	32.9615	26

Within Groups Total		3.1000	1.1797	133.6104	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.3896	3	1.1299	.8118	.4904
Within Groups	133.6104	96	1.3918		
Eta = .1573 Eta Squared = .0247					

APPENDIX D

- - Description of Subpopulations - -

Summaries of ASK
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.9400	.9516	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.8286	.9544	35
INDRESC	3.00		3.9211	.9693	38
INDRESC	4.00		4.1154	.9519	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable ASK
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.8286	.9544	30.9714	35
3.00		3.9211	.9693	34.7632	38
4.00		4.1154	.9519	22.6538	26

Within Groups Total		3.9400	.9595	88.3884	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.2516	3	.4172	.4531	.7157
Within Groups	88.3884	96	.9207		
Eta = .1182		Eta Squared = .0140			

- - Description of Subpopulations - -

Summaries of ASSOCIAT Associations
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.0700	1.0565	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		3.2000	1.1324	35
INDRESC	3.00		3.1053	.9238	38
INDRESC	4.00		2.7692	1.0699	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable ASSOCIAT Associations
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		3.2000	1.1324	43.6000	35
3.00		3.1053	.9238	31.5789	38
4.00		2.7692	1.0699	28.6154	26

Within Groups Total		3.0700	1.0398	103.7943	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	6.7157	3	2.2386	2.0705	.1092
Within Groups	103.7943	96	1.0812		
Eta = .2465 Eta Squared = .0608					

- - Description of Subpopulations - -

Summaries of BETTER
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.3100	1.0120	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		2.3143	.9933	35
INDRESC	3.00		2.2895	.9839	38
INDRESC	4.00		2.3462	1.1293	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable BETTER
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		2.3143	.9933	33.5429	35
3.00		2.2895	.9839	35.8158	38
4.00		2.3462	1.1293	31.8846	26

Within Groups Total		2.3100	1.0269	101.2433	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.1467	3	.0489	.0464	.9867
Within Groups	101.2433	96	1.0546		
Eta = .0380 Eta Squared = .0014					

APPENDIX D

- - Description of Subpopulations - -

Summaries of CHECK
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			4.0900	.7926	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		4.2286	.6897	35
INDRESC	3.00		4.2632	.6851	38
INDRESC	4.00		3.6154	.8979	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable CHECK
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		4.2286	.6897	16.1714	35
3.00		4.2632	.6851	17.3684	38
4.00		3.6154	.8979	20.1538	26

Within Groups Total		4.0900	.7479	53.6937	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	8.4963	3	2.8321	5.0636	.0027
Within Groups	53.6937	96	.5593		

Eta = .3696 Eta Squared = .1366

- - Description of Subpopulations - -

Summaries of CLARIFY
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.4700	1.0960	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		3.6000	.9139	35
INDRESC	3.00		3.3684	1.1722	38
INDRESC	4.00		3.3846	1.2026	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable CLARIFY
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		3.6000	.9139	28.4000	35
3.00		3.3684	1.1722	50.8421	38
4.00		3.3846	1.2026	36.1538	26

Within Groups Total		3.4700	1.0964	115.3960	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.5140	3	1.1713	.9745	.4082
Within Groups	115.3960	96	1.2020		
		Eta = .1719	Eta Squared = .0296		

- - Description of Subpopulations - -

Summaries of COMBINE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.9500	1.3587	100
INDRESC	1.00		9.0000		1
INDRESC	2.00		2.8000	1.0516	35
INDRESC	3.00		2.8947	1.3313	38
INDRESC	4.00		3.0000	1.2961	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable COMBINE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		9.0000		.0000	1
2.00		2.8000	1.0516	37.6000	35
3.00		2.8947	1.3313	65.5789	38
4.00		3.0000	1.2961	42.0000	26

Within Groups Total		2.9500	1.2297	145.1789	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	37.5711	3	12.5237	8.2813	.0001
Within Groups	145.1789	96	1.5123		
		Eta = .4534	Eta Squared = .2056		

APPENDIX D

- - Description of Subpopulations - -

Summaries of CONCENTR
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			4.0400	.7510	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		4.0000	.7276	35
INDRESC	3.00		4.0789	.7844	38
INDRESC	4.00		4.0769	.7442	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable CONCENTR
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		4.0000	.7276	18.0000	35
3.00		4.0789	.7844	22.7632	38
4.00		4.0769	.7442	13.8462	26

Within Groups Total		4.0400	.7542	54.6093	100
Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.2307	3	.4102	.7212	.5418
Within Groups	54.6093	96	.5688		
Eta = .1485		Eta Squared = .0220			

- - Description of Subpopulations - -

Summaries of CORRECT
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.9800	1.1190	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.1714	1.1754	35
INDRESC	3.00		3.0000	1.1390	38
INDRESC	4.00		2.6538	.9774	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable CORRECT
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.1714	1.1754	46.9714	35
3.00		3.0000	1.1390	48.0000	38
4.00		2.6538	.9774	23.8846	26

Within Groups Total		2.9800	1.1127	118.8560	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	5.1040	3	1.7013	1.3742	.2553
Within Groups	118.8560	96	1.2381		
Eta = .2029 Eta Squared = .0412					

- - Description of Subpopulations - -

Summaries of CULTURE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.2700	1.2132	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.6571	1.0831	35
INDRESC	3.00		2.9211	1.2166	38
INDRESC	4.00		3.2308	1.2746	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable CULTURE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.6571	1.0831	39.8857	35
3.00		2.9211	1.2166	54.7632	38
4.00		3.2308	1.2746	40.6154	26

Within Groups Total		3.2700	1.1870	135.2643	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	10.4457	3	3.4819	2.4712	.0664
Within Groups	135.2643	96	1.4090		
Eta = .2677 Eta Squared = .0717					

APPENDIX D

- - Description of Subpopulations - -

Summaries of DAY
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.0600	1.0132	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		2.3429	.9684	35
INDRESC	3.00		1.9474	1.0120	38
INDRESC	4.00		1.8462	1.0466	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable DAY
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		2.3429	.9684	31.8857	35
3.00		1.9474	1.0120	37.8947	38
4.00		1.8462	1.0466	27.3846	26

Within Groups Total		2.0600	1.0060	97.1651	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	4.4749	3	1.4916	1.4738	.2266
Within Groups	97.1651	96	1.0121		

Eta = .2098 Eta Squared = .0440

- - Description of Subpopulations - -

Summaries of DETAILS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.8100	1.0318	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.9429	.9056	35
INDRESC	3.00		3.8421	.9452	38
INDRESC	4.00		3.5769	1.3015	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable DETAILS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.9429	.9056	27.8857	35
3.00		3.8421	.9452	33.0526	38
4.00		3.5769	1.3015	42.3462	26

Within Groups Total		3.8100	1.0372	103.2845	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.1055	3	.7018	.6523	.5834
Within Groups	103.2845	96	1.0759		
Eta = .1413		Eta Squared = .0200			

- - Description of Subpopulations - -

Summaries of DIRECT
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.9200	1.1606	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		2.8571	1.2401	35
INDRESC	3.00		3.0263	1.1267	38
INDRESC	4.00		2.8846	1.1429	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable DIRECT
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		2.8571	1.2401	52.2857	35
3.00		3.0263	1.1267	46.9737	38
4.00		2.8846	1.1429	32.6538	26

Within Groups Total		2.9200	1.1722	131.9132	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.4463	3	.4823	.3510	.7885
Within Groups	131.9132	96	1.3741		
Eta = .1042		Eta Squared = .0108			

APPENDIX D

- - Description of Subpopulations - -

Summaries of ENCOURAG
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.7800	1.2600	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		2.7714	1.2387	35
INDRESC	3.00		2.8684	1.3591	38
INDRESC	4.00		2.6538	1.1981	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable ENCOURAG
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		2.7714	1.2387	52.1714	35
3.00		2.8684	1.3591	68.3421	38
4.00		2.6538	1.1981	35.8846	26

Within Groups Total		2.7800	1.2764	156.3981	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.7619	3	.2540	.1559	.9257
Within Groups	156.3981	96	1.6291		
Eta = .0696		Eta Squared = .0048			

- - Description of Subpopulations - -

Summaries of ENVIRON
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.9500	.9679	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		3.9143	.9509	35
INDRESC	3.00		3.9474	.9850	38
INDRESC	4.00		3.9615	.9992	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable ENVIRON
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		3.9143	.9509	30.7429	35
3.00		3.9474	.9850	35.8947	38
4.00		3.9615	.9992	24.9615	26

Within Groups Total		3.9500	.9768	91.5991	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.1509	3	.3836	.4021	.7518
Within Groups	91.5991	96	.9542		
Eta = .1114 Eta Squared = .0124					

- - Description of Subpopulations - -

Summaries of ERRORS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			3.4900	1.0492	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		3.7143	.8250	35
INDRESC	3.00		3.4211	1.1302	38
INDRESC	4.00		3.2308	1.1422	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable ERRORS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		3.7143	.8250	23.1429	35
3.00		3.4211	1.1302	47.2632	38
4.00		3.2308	1.1422	32.6154	26

Within Groups Total		3.4900	1.0359	103.0214	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	5.9686	3	1.9895	1.8539	.1426
Within Groups	103.0214	96	1.0731		
Eta = .2340 Eta Squared = .0548					

APPENDIX D

- - Description of Subpopulations - -

Summaries of FAMILIAR
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.5300	1.1674	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		2.4000	1.0347	35
INDRESC	3.00		2.4474	1.1786	38
INDRESC	4.00		2.8077	1.3272	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable FAMILIAR
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		2.4000	1.0347	36.4000	35
3.00		2.4474	1.1786	51.3947	38
4.00		2.8077	1.3272	44.0385	26

Within Groups Total		2.5300	1.1719	131.8332	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.0768	3	1.0256	.7468	.5268
Within Groups	131.8332	96	1.3733		

Eta = .1510 Eta Squared = .0228

- - Description of Subpopulations - -

Summaries of FEELINGS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.8000	1.1807	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.0000	1.0290	35
INDRESC	3.00		2.3684	1.1489	38
INDRESC	4.00		3.1154	1.2752	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable FEELINGS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.0000	1.0290	36.0000	35
3.00		2.3684	1.1489	48.8421	38
4.00		3.1154	1.2752	40.6538	26

Within Groups Total		2.8000	1.1434	125.4960	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	12.5040	3	4.1680	3.1884	.0272
Within Groups	125.4960	96	1.3072		

Eta = .3010 Eta Squared = .0906

- - Description of Subpopulations - -

Summaries of FLASHCAR
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.3800	.7075	100
INDRESC	1.00		1.0000		1
INDRESC	2.00		1.4286	.7391	35
INDRESC	3.00		1.3158	.6619	38
INDRESC	4.00		1.4231	.7575	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable FLASHCAR
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		1.0000		.0000	1
2.00		1.4286	.7391	18.5714	35
3.00		1.3158	.6619	16.2105	38
4.00		1.4231	.7575	14.3462	26

Within Groups Total		1.3800	.7154	49.1281	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.4319	3	.1440	.2813	.8388
Within Groups	49.1281	96	.5118		

Eta = .0934 Eta Squared = .0087

APPENDIX D

- - Description of Subpopulations - -

Summaries of GENERAL
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.1300	1.1604	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		3.3714	.9727	35
INDRESC	3.00		3.1053	1.2690	38
INDRESC	4.00		2.8462	1.2229	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable GENERAL
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		3.3714	.9727	32.1714	35
3.00		3.1053	1.2690	59.5789	38
4.00		2.8462	1.2229	37.3846	26

Within Groups Total		3.1300	1.1598	129.1350	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	4.1750	3	1.3917	1.0346	.3809
Within Groups	129.1350	96	1.3452		

Eta = .1770 Eta Squared = .0313

- - Description of Subpopulations - -

Summaries of GESTURES
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.7000	1.1237	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		3.3714	1.1398	35
INDRESC	3.00		3.7105	.9560	38
INDRESC	4.00		4.1923	1.1668	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable GESTURES
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		3.3714	1.1398	44.1714	35
3.00		3.7105	.9560	33.8158	38
4.00		4.1923	1.1668	34.0385	26

Within Groups Total		3.7000	1.0802	112.0257	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	12.9743	3	4.3248	3.7061	.0143
Within Groups	112.0257	96	1.1669		
Eta = .3222		Eta Squared = .1038			

- - Description of Subpopulations - -

Summaries of GOALS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.0700	1.2082	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.4286	1.1190	35
INDRESC	3.00		3.0526	1.1137	38
INDRESC	4.00		2.5769	1.3319	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable GOALS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.4286	1.1190	42.5714	35
3.00		3.0526	1.1137	45.8947	38
4.00		2.5769	1.3319	44.3462	26

Within Groups Total		3.0700	1.1762	132.8123	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	11.6977	3	3.8992	2.8185	.0431
Within Groups	132.8123	96	1.3835		
Eta = .2845		Eta Squared = .0809			

APPENDIX D

- - Description of Subpopulations - -

Summaries of GROUP
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.5700	1.2493	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		2.7429	1.2210	35
INDRESC	3.00		2.6053	1.2848	38
INDRESC	4.00		2.2308	1.2102	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable GROUP
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		2.7429	1.2210	50.6857	35
3.00		2.6053	1.2848	61.0789	38
4.00		2.2308	1.2102	36.6154	26

Within Groups Total		2.5700	1.2432	148.3800	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	6.1300	3	2.0433	1.3220	.2718
Within Groups	148.3800	96	1.5456		

Eta = .1992 Eta Squared = .0397

- - Description of Subpopulations - -

Summaries of GUESS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			4.2600	.8241	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		4.2857	.6674	35
INDRESC	3.00		4.1842	.9258	38
INDRESC	4.00		4.3077	.8840	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable GUESS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000	.	.0000	1
2.00		4.2857	.6674	15.1429	35
3.00		4.1842	.9258	31.7105	38
4.00		4.3077	.8840	19.5385	26

Within Groups Total		4.2600	.8316	66.3918	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.8482	3	.2827	.4088	.7470
Within Groups	66.3918	96	.6916		
Eta = .1123		Eta Squared = .0126			

- - Description of Subpopulations - -

Summaries of HELP
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.2800	1.1983	100
INDRESC	1.00		4.0000	.	1
INDRESC	2.00		3.2571	1.1966	35
INDRESC	3.00		3.1842	1.2489	38
INDRESC	4.00		3.4231	1.1721	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable HELP
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000	.	.0000	1
2.00		3.2571	1.1966	48.6857	35
3.00		3.1842	1.2489	57.7105	38
4.00		3.4231	1.1721	34.3462	26

Within Groups Total		3.2800	1.2108	140.7424	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.4176	3	.4725	.3223	.8092
Within Groups	140.7424	96	1.4661		
Eta = .0999		Eta Squared = .0100			

APPENDIX D

- - Description of Subpopulations - -

Summaries of IDIOMS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			5.7097	.9476	62
INDRESC	2.00		6.4000	.6806	20
INDRESC	3.00		5.6923	.7884	26
INDRESC	4.00		4.8750	.8062	16

Total Cases = 100
Missing Cases = 38 or 38.0 Pct

- - Analysis of Variance - -

Dependent Variable IDIOMS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
2.00		6.4000	.6806	8.8000	20
3.00		5.6923	.7884	15.5385	26
4.00		4.8750	.8062	9.7500	16

Within Groups Total		5.7097	.7601	34.0885	62

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	20.6857	2	10.3429	17.9013	.0000
Within Groups	34.0885	59	.5778		
Eta = .6145 Eta Squared = .3777					

- - Description of Subpopulations - -

Summaries of IMAGE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.0400	1.1627	100
INDRESC	1.00		1.0000		1
INDRESC	2.00		1.9714	1.1754	35
INDRESC	3.00		2.2105	1.2337	38
INDRESC	4.00		1.9231	1.0554	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable IMAGE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		1.0000	.	.0000	1
2.00		1.9714	1.1754	46.9714	35
3.00		2.2105	1.2337	56.3158	38
4.00		1.9231	1.0554	27.8462	26

Within Groups Total		2.0400	1.1687	131.1334	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.7066	3	.9022	.6505	.5784
Within Groups	131.1334	96	1.3660		
		Eta = .1422	Eta Squared = .0202		

- - Description of Subpopulations - -

Summaries of IMITATE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.0900	1.2641	100
INDRESC	1.00		4.0000	.	1
INDRESC	2.00		3.2571	1.2448	35
INDRESC	3.00		2.9474	1.4132	38
INDRESC	4.00		3.0385	1.0763	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable IMITATE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000	.	.0000	1
2.00		3.2571	1.2448	52.6857	35
3.00		2.9474	1.4132	73.8947	38
4.00		3.0385	1.0763	28.9615	26

Within Groups Total		3.0900	1.2729	155.5420	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.6480	3	.8827	.5448	.6528
Within Groups	155.5420	96	1.6202		
		Eta = .1294	Eta Squared = .0167		

APPENDIX D

- - Description of Subpopulations - -

Summaries of INITIATE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.4400	1.1662	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		2.6286	1.2623	35
INDRESC	3.00		2.3947	1.1517	38
INDRESC	4.00		2.1923	1.0206	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable INITIATE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000	.	.0000	1
2.00		2.6286	1.2623	54.1714	35
3.00		2.3947	1.1517	49.0789	38
4.00		2.1923	1.0206	26.0385	26
Within Groups Total		2.4400	1.1605	129.2888	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	5.3512	3	1.7837	1.3245	.2710
Within Groups	129.2888	96	1.3468		
Eta = .1994		Eta Squared = .0397			

- - Description of Subpopulations - -

Summaries of JOURNAL
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.0900	.2876	100
INDRESC	1.00		1.0000		1
INDRESC	2.00		1.1143	.3228	35
INDRESC	3.00		1.0789	.2733	38
INDRESC	4.00		1.0769	.2717	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable JOURNAL
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		1.0000		.0000	1
2.00		1.1143	.3228	3.5429	35
3.00		1.0789	.2733	2.7632	38
4.00		1.0769	.2717	1.8462	26

Within Groups Total		1.0900	.2914	8.1522	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.0378	3	.0126	.1485	.9304
Within Groups	8.1522	96	.0849		
Eta = .0680		Eta Squared = .0046			

- - Description of Subpopulations - -

Summaries of LANGNOTE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.7600	1.0359	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		3.9714	.9848	35
INDRESC	3.00		3.6842	.9893	38
INDRESC	4.00		3.6154	1.1688	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable LANGNOTE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		3.9714	.9848	32.9714	35
3.00		3.6842	.9893	36.2105	38
4.00		3.6154	1.1688	34.1538	26

Within Groups Total		3.7600	1.0375	103.3358	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.9042	3	.9681	.8993	.4446
Within Groups	103.3358	96	1.0764		
Eta = .1653		Eta Squared = .0273			

APPENDIX D

- - Description of Subpopulations - -

Summaries of LINES
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.7000	.9587	100
INDRESC	1.00		1.0000		1
INDRESC	2.00		1.7714	1.0025	35
INDRESC	3.00		1.7632	.9708	38
INDRESC	4.00		1.5385	.9047	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable LINES
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		1.0000	.	.0000	1
2.00		1.7714	1.0025	34.1714	35
3.00		1.7632	.9708	34.8684	38
4.00		1.5385	.9047	20.4615	26
Within Groups Total		1.7000	.9656	89.5014	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.4986	3	.4995	.5358	.6589
Within Groups	89.5014	96	.9323		
Eta = .1283		Eta Squared = .0165			

- - Description of Subpopulations - -

Summaries of LOCATION
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.2900	1.2496	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.4857	1.0396	35
INDRESC	3.00		3.0789	1.3433	38
INDRESC	4.00		3.3077	1.3790	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable LOCATION
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.4857	1.0396	36.7429	35
3.00		3.0789	1.3433	66.7632	38
4.00		3.3077	1.3790	47.5385	26

Within Groups Total		3.2900	1.2543	151.0445	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.5455	3	1.1818	.7511	.5243
Within Groups	151.0445	96	1.5734		
		Eta = .1514	Eta Squared = .0229		

- - Description of Subpopulations - -

Summaries of LOOK
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.1400	1.0251	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		2.2571	1.1966	35
INDRESC	3.00		2.2105	.9346	38
INDRESC	4.00		1.8077	.8010	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable LOOK
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		2.2571	1.1966	48.6857	35
3.00		2.2105	.9346	32.3158	38
4.00		1.8077	.8010	16.0385	26

Within Groups Total		2.1400	1.0054	97.0400	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	7.0000	3	2.3333	2.3083	.0813
Within Groups	97.0400	96	1.0108		
		Eta = .2594	Eta Squared = .0673		

APPENDIX D

- - Description of Subpopulations - -

Summaries of MISTAKES
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.8400	.9181	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		4.1429	.4937	35
INDRESC	3.00		3.6053	1.1038	38
INDRESC	4.00		3.7308	.9616	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable MISTAKES
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		4.1429	.4937	8.2857	35
3.00		3.6053	1.1038	45.0789	38
4.00		3.7308	.9616	23.1154	26
Within Groups Total		3.8400	.8926	76.4800	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	6.9600	3	2.3200	2.9121	.0384
Within Groups	76.4800	96	.7967		
Eta = .2888		Eta Squared = .0834			

- - Description of Subpopulations - -

Summaries of NEWWORDS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.3500	1.2663	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		2.2857	1.2502	35
INDRESC	3.00		2.2105	1.2554	38
INDRESC	4.00		2.6154	1.3290	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable NEWWORDS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		2.2857	1.2502	53.1429	35
3.00		2.2105	1.2554	58.3158	38
4.00		2.6154	1.3290	44.1538	26

Within Groups Total		2.3500	1.2732	155.6125	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	3.1375	3	1.0458	.6452	.5879
Within Groups	155.6125	96	1.6210		
Eta = .1406 Eta Squared = .0198					

- - Description of Subpopulations - -

Summaries of NOTES
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			4.4300	.8439	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		4.4571	.7413	35
INDRESC	3.00		4.5263	.7618	38
INDRESC	4.00		4.3077	1.0495	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable NOTES
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		4.4571	.7413	18.6857	35
3.00		4.5263	.7618	21.4737	38
4.00		4.3077	1.0495	27.5385	26

Within Groups Total		4.4300	.8398	67.6979	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	2.8121	3	.9374	1.3293	.2694
Within Groups	67.6979	96	7052		
Eta = .1997 Eta Squared = .0399					

APPENDIX D

- - Description of Subpopulations - -

Summaries of NTRANSFE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.7300	1.0717	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		3.9143	.9509	35
INDRESC	3.00		3.6842	1.0931	38
INDRESC	4.00		3.5000	1.1747	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable NTRANSFE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		3.9143	.9509	30.7429	35
3.00		3.6842	1.0931	44.2105	38
4.00		3.5000	1.1747	34.5000	26

Within Groups Total		3.7300	1.0678	109.4534	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	4.2566	3	1.4189	1.2445	.2980
Within Groups	109.4534	96	1.1401		

Eta = .1935 Eta Squared = .0374

- - Description of Subpopulations - -

Summaries of OUTSIDE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.9700	1.0584	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		2.1143	1.1054	35
INDRESC	3.00		2.0000	1.1150	38
INDRESC	4.00		1.6923	.8840	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable OUTSIDE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		2.1143	1.1054	41.5429	35
3.00		2.0000	1.1150	46.0000	38
4.00		1.6923	.8840	19.5385	26

Within Groups Total		1.9700	1.0561	107.0813	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.8287	3	1.2762	1.1442	.3353
Within Groups	107.0813	96	1.1154		
Eta = .1858 Eta Squared = .0345					

- - Description of Subpopulations - -

Summaries of PARTNER
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			1.7400	1.0012	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		1.9143	1.0947	35
INDRESC	3.00		1.8421	1.1035	38
INDRESC	4.00		1.3462	.5616	26
Total Cases = 100					

- - Analysis of Variance - -

Dependent Variable PARTNER
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		1.9143	1.0947	40.7429	35
3.00		1.8421	1.1035	45.0526	38
4.00		1.3462	.5616	7.8846	26

Within Groups Total		1.7400	.9878	93.6801	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	5.5599	3	1.8533	1.8992	.1349
Within Groups	93.6801	96	.9758		
Eta = .2367 Eta Squared = .0560					

APPENDIX D

- - Description of Subpopulations - -

Summaries of PARTS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.9600	.9203	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		4.0000	.8745	35
INDRESC	3.00		4.0000	.8699	38
INDRESC	4.00		3.8462	1.0842	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable PARTS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		4.0000	.8745	26.0000	35
3.00		4.0000	.8699	28.0000	38
4.00		3.8462	1.0842	29.3846	26

Within Groups Total		3.9600	.9320	83.3846	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.4554	3	.1518	.1748	.9132
Within Groups	83.3846	96	.8686		
Eta = .0737		Eta Squared = .0054			

- - Description of Subpopulations - -

Summaries of PATTERNS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.2200	1.1333	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.3714	1.0314	35
INDRESC	3.00		2.9737	1.1505	38
INDRESC	4.00		3.3462	1.2310	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable PATTERNS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.3714	1.0314	36.1714	35
3.00		2.9737	1.1505	48.9737	38
4.00		3.3462	1.2310	37.8846	26

Within Groups Total		3.2200	1.1321	123.0297	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	4.1303	3	1.3768	1.0743	.3638
Within Groups	123.0297	96	1.2816		
Eta = .1802 Eta Squared = .0325					

- - Description of Subpopulations - -

Summaries of PHYSICAL
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.2400	.6375	100
INDRESC	1.00		1.0000		1
INDRESC	2.00		1.2000	.5314	35
INDRESC	3.00		1.1842	.6087	38
INDRESC	4.00		1.3846	.8038	26
Total Cases = 100					

- - Analysis of Variance - -

Dependent Variable PHYSICAL
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		1.0000		.0000	1
2.00		1.2000	.5314	9.6000	35
3.00		1.1842	.6087	13.7105	38
4.00		1.3846	.8038	16.1538	26

Within Groups Total		1.2400	.6412	39.4644	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.7756	3	.2585	.6289	.5981
Within Groups	39.4644	96	.4111		
Eta = .1388 Eta Squared = .0193					

APPENDIX D

- - Description of Subpopulations - -

Summaries of PRACTICE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.6900	1.1344	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		2.6857	1.0508	35
INDRESC	3.00		2.8947	1.1099	38
INDRESC	4.00		2.3846	1.2673	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable PRACTICE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		2.6857	1.0508	37.5429	35
3.00		2.8947	1.1099	45.5789	38
4.00		2.3846	1.2673	40.1538	26

Within Groups Total		2.6900	1.1332	123.2757	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig
Between Groups	4.1143	3	1.3714	1.0680	.3664
Within Groups	123.2757	96	1.2841		
Eta = .1797		Eta Squared = .0323			

- - Description of Subpopulations - -

Summaries of PREPARE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.8600	.8879	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		4.0000	.9075	35
INDRESC	3.00		3.8947	.7637	38
INDRESC	4.00		3.6538	1.0175	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable PREPARE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		4.0000	.9075	28.0000	35
3.00		3.8947	.7637	21.5789	38
4.00		3.6538	1.0175	25.8846	26

Within Groups Total		3.8600	.8866	75.4636	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.5764	3	.8588	1.0925	.3561
Within Groups	75.4636	96	.7861		
Eta = .1817		Eta Squared = .0330			

- - Description of Subpopulations - -

Summaries of PREVIEW
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			1.9500	.9468	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		1.9429	.9375	35
INDRESC	3.00		1.9211	.8817	38
INDRESC	4.00		2.0000	1.0954	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable PREVIEW
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		1.9429	.9375	29.8857	35
3.00		1.9211	.8817	28.7632	38
4.00		2.0000	1.0954	30.0000	26

Within Groups Total		1.9500	.9610	88.6489	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.1011	3	.0337	.0365	.9906
Within Groups	88.6489	96	.9234		
Eta = .0338		Eta Squared = .0011			

APPENDIX D

- - Description of Subpopulations - -

Summaries of PROGRESS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.8700	1.1070	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		3.0857	1.1725	35
INDRESC	3.00		2.6579	1.1217	38
INDRESC	4.00		2.8846	.9931	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable PROGRESS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000	.	.0000	1
2.00		3.0857	1.1725	46.7429	35
3.00		2.6579	1.1217	46.5526	38
4.00		2.8846	.9931	24.6538	26

Within Groups Total		2.8700	1.1084	117.9493	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.3607	3	1.1202	.9118	.4384
Within Groups	117.9493	96	1.2286		
Eta = .1664		Eta Squared = .0277			

- - Description of Subpopulations - -

Summaries of PURPOSE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.8300	.8768	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.8286	.7854	35
INDRESC	3.00		3.9737	.9440	38
INDRESC	4.00		3.6154	.8979	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable PURPOSE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.8286	.7854	20.9714	35
3.00		3.9737	.9440	32.9737	38
4.00		3.6154	.8979	20.1538	26

Within Groups Total		3.8300	.8786	74.0990	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.0110	3	.6703	.8685	.4603
Within Groups	74.0990	96	.7719		
Eta = .1626 Eta Squared = .0264					

- - Description of Subpopulations - -

Summaries of QUESTION
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			3.2600	1.1066	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.5714	1.0084	35
INDRESC	3.00		2.9211	1.0235	38
INDRESC	4.00		3.3077	1.2576	26
Total Cases = 100					

- - Analysis of Variance - -

Dependent Variable QUESTION
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.5714	1.0084	34.5714	35
3.00		2.9211	1.0235	38.7632	38
4.00		3.3077	1.2576	39.5385	26

Within Groups Total		3.2600	1.0843	112.8730	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	8.3670	3	2.7890	2.3721	.0751
Within Groups	112.8730	96	1.1758		
Eta = .2627 Eta Squared = .0690					

APPENDIX D

- - Description of Subpopulations - -

Summaries of READP
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.2300	1.1964	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		2.5714	1.2899	35
INDRESC	3.00		1.9211	1.0496	38
INDRESC	4.00		2.1538	1.1556	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable READP
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		2.5714	1.2899	56.5714	35
3.00		1.9211	1.0496	40.7632	38
4.00		2.1538	1.1556	33.3846	26

Within Groups Total		2.2300	1.1669	130.7192	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	10.9908	3	3.6636	2.6905	.0506
Within Groups	130.7192	96	1.3617		
		Eta = .2785	Eta Squared = .0776		

- - Description of Subpopulations - -

Summaries of READUN
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.8300	1.0923	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		4.0857	.8531	35
INDRESC	3.00		3.6053	1.2848	38
INDRESC	4.00		3.7692	1.0318	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable READUN
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		4.0857	.8531	24.7429	35
3.00		3.6053	1.2848	61.0789	38
4.00		3.7692	1.0318	26.6154	26

Within Groups Total		3.8300	1.0822	112.4372	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	5.6728	3	1.8909	1.6145	.1911
Within Groups	112.4372	96	1.1712		
Eta = .2192 Eta Squared = .0480					

- - Description of Subpopulations - -

Summaries of REFERENC
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			4.7100	.5738	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		4.7429	.5054	35
INDRESC	3.00		4.7632	.4896	38
INDRESC	4.00		4.6538	.6895	26
Total Cases = 100					

- - Analysis of Variance - -

Dependent Variable REFERENC
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		4.7429	.5054	8.6857	35
3.00		4.7632	.4896	8.8684	38
4.00		4.6538	.6895	11.8846	26

Within Groups Total		4.7100	.5538	29.4388	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.1512	3	1.0504	3.4254	.0202
Within Groups	29.4388	96	.3067		
Eta = .3110 Eta Squared = .0967					

APPENDIX D

- - Description of Subpopulations - -

Summaries of REFRESH
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.1400	1.0447	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		3.1143	1.0508	35
INDRESC	3.00		3.2105	1.0694	38
INDRESC	4.00		3.1154	1.0325	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable REFRESH
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		3.1143	1.0508	37.5429	35
3.00		3.2105	1.0694	42.3158	38
4.00		3.1154	1.0325	26.6538	26

Within Groups Total		3.1400	1.0533	106.5125	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.5275	3	.5092	.4589	.7116
Within Groups	106.5125	96	1.1095		
Eta = .1189		Eta Squared = .0141			

- - Description of Subpopulations - -

Summaries of RELAX
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.6000	1.0445	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		3.8286	.9231	35
INDRESC	3.00		3.7368	1.0315	38
INDRESC	4.00		3.0385	1.0385	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable RELAX
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		3.8286	.9231	28.9714	35
3.00		3.7368	1.0315	39.3684	38
4.00		3.0385	1.0385	26.9615	26

Within Groups Total		3.6000	.9964	95.3014	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	12.6986	3	4.2329	4.2639	.0071
Within Groups	95.3014	96	.9927		
Eta = .3429		Eta Squared = .1176			

- - Description of Subpopulations - -

Summaries of REPEAT
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			3.0100	1.2752	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		3.1714	1.2001	35
INDRESC	3.00		2.8684	1.2980	38
INDRESC	4.00		3.0385	1.3706	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable REPEAT
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		3.1714	1.2001	48.9714	35
3.00		2.8684	1.2980	62.3421	38
4.00		3.0385	1.3706	46.9615	26

Within Groups Total		3.0100	1.2840	158.2751	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.7149	3	.9050	5489	.6501
Within Groups	158.2751	96	1.6487		
Eta = .1299		Eta Squared = .0169			

APPENDIX D

- - Description of Subpopulations - -

Summaries of REPONSIB
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.9600	1.0723	100
INDRESC	1.00		4.0000	.	1
INDRESC	2.00		3.0857	1.0109	35
INDRESC	3.00		3.0263	1.0523	38
INDRESC	4.00		2.6538	1.1642	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable REPONSIB
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000	.	.0000	1
2.00		3.0857	1.0109	34.7429	35
3.00		3.0263	1.0523	40.9737	38
4.00		2.6538	1.1642	33.8846	26
Within Groups Total		2.9600	1.0685	109.6012	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	4.2388	3	1.4129	1.2376	.3004
Within Groups	109.6012	96	1.1417		
Eta = .1930		Eta Squared = .0372			

- - Description of Subpopulations - -

Summaries of REVISE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.7800	.8596	100
INDRESC	1.00		3.0000	.	1
INDRESC	2.00		2.6571	.8382	35
INDRESC	3.00		2.8684	.9056	38
INDRESC	4.00		2.8077	.8494	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable REWIDE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000	.	.0000	1
2.00		2.6571	.8382	23.8857	35
3.00		2.8684	.9056	30.3421	38
4.00		2.8077	.8494	18.0385	26

Within Groups Total		2.7800	.8676	72.2663	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	.8937	3	.2979	.3957	.7563
Within Groups	72.2663	96	.7528		
Eta = .1105 Eta Squared = .0122					

- - Description of Subpopulations - -

Summaries of REWARD
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			1.7400	.9494	100
INDRESC	1.00		3.0000	.	1
INDRESC	2.00		1.6000	.8117	35
INDRESC	3.00		1.7632	1.0249	38
INDRESC	4.00		1.8462	1.0077	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable REWARD
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000	.	.0000	1
2.00		1.6000	.8117	22.4000	35
3.00		1.7632	1.0249	38.8684	38
4.00		1.8462	1.0077	25.3846	26

Within Groups Total		1.7400	.9501	86.6530	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.5870	3	.8623	.9553	.4172
Within Groups	86.6530	96	.9026		
Eta = .1703 Eta Squared = .0290					

APPENDIX D

- - Description of Subpopulations - -

Summaries of RHYME
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.7200	.9543	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		1.5143	.7811	35
INDRESC	3.00		1.7895	1.0176	38
INDRESC	4.00		1.8846	1.0706	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable RHYME
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		1.5143	.7811	20.7429	35
3.00		1.7895	1.0176	38.3158	38
4.00		1.8846	1.0706	28.6538	26

Within Groups Total		1.7200	.9559	87.7125	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.4475	3	.8158	.8929	.4478
Within Groups	87.7125	96	.9137		
Eta = .1648		Eta Squared = .0271			

- - Description of Subpopulations - -

Summaries of RISKS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.6500	1.1315	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		3.7714	1.1903	35
INDRESC	3.00		3.6579	1.0724	38
INDRESC	4.00		3.4231	1.1375	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable RISKS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		3.7714	1.1903	48.1714	35
3.00		3.6579	1.0724	42.5526	38
4.00		3.4231	1.1375	32.3462	26

Within Groups Total		3.6500	1.1322	123.0702	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.6798	3	1.2266	.9568	.4165
Within Groups	123.0702	96	1.2820		
		Eta = .1704	Eta Squared = .0290		

- - Description of Subpopulations - -

Summaries of SENTENCE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population					
			2.3500	1.1135	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		2.6857	1.1825	35
INDRESC	3.00		2.3421	1.0724	38
INDRESC	4.00		1.8846	.9519	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable SENTENCE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000		.0000	1
2.00		2.6857	1.1825	47.5429	35
3.00		2.3421	1.0724	42.5526	38
4.00		1.8846	.9519	22.6538	26

Within Groups Total		2.3500	1.0837	112.7493	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	10.0007	3	3.3336	2.8383	.0420
Within Groups	112.7493	96	1.1745		
		Eta = .2854	Eta Squared = .081		

APPENDIX D

- - Description of Subpopulations - -

Summaries of SCHEDULE
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.5400	.9992	100
INDRESC	1.00		2.0000	.	1
INDRESC	2.00		2.7429	.9500	35
INDRESC	3.00		2.4737	1.0840	38
INDRESC	4.00		2.3846	.9414	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable SCHEDULE
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000	.	.0000	1
2.00		2.7429	.9500	30.6857	35
3.00		2.4737	1.0840	43.4737	38
4.00		2.3846	.9414	22.1538	26

Within Groups Total		2.5400	1.0016	96.3132	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.5268	3	.8423	.8395	.4755
Within Groups	96.3132	96	1.0033		

Eta = .1599 Eta Squared = .0256

- - Description of Subpopulations - -

Summaries of SESSIONS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.1600	.9715	100
INDRESC	1.00		4.0000	.	1
INDRESC	2.00		2.2286	1.0314	35
INDRESC	3.00		2.0789	.8817	38
INDRESC	4.00		2.1154	.9931	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable SESSIONS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		2.2286	1.0314	36.1714	35
3.00		2.0789	.8817	28.7632	38
4.00		2.1154	.9931	24.6538	26

Within Groups Total		2.1600	.9660	89.5884	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	3.8516	3	1.2839	1.3757	.2549
Within Groups	89.5884	96	.9332		
		Eta = .2030	Eta Squared = .0412		

- - Description of Subpopulations - -

Summaries of SEVERAL
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.8400	1.0418	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.9429	.7648	35
INDRESC	3.00		3.8684	1.2119	38
INDRESC	4.00		3.6538	1.1293	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable SEVERAL
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.9429	.7648	19.8857	35
3.00		3.8684	1.2119	54.3421	38
4.00		3.6538	1.1293	31.8846	26

Within Groups Total		3.8400	1.0514	106.1124	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	1.3276	3	.4425	4.003	.7531
Within Groups	106.1124	96	1.1053		
		Eta = .1112	Eta Squared = .0124		

APPENDIX D

- - Description of Subpopulations - -

Summaries of SIMILARD
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.7300	1.0996	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.5714	1.1190	35
INDRESC	3.00		3.6316	1.1951	38
INDRESC	4.00		4.0769	.8910	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable SIMILARD
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.5714	1.1190	42.5714	35
3.00		3.6316	1.1951	52.8421	38
4.00		4.0769	.8910	19.8462	26

Within Groups Total		3.7300	1.0957	115.2597	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	4.4503	3	1.4834	1.2356	.3011
Within Groups	115.2597	96	1.2006		

Eta = .1928 Eta Squared = .0372

- - Description of Subpopulations - -

Summaries of SKIM
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			4.2000	.9744	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		4.3143	.8321	35
INDRESC	3.00		4.2895	.9273	38
INDRESC	4.00		3.9231	1.1974	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable SKIM
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000	.	.0000	1
2.00		4.3143	.8321	23.5429	35
3.00		4.2895	.9273	31.8158	18
4.00		3.9231	1.1974	35.8462	26

Within Groups Total		4.2000	.9747	91.2048	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.7952	3	.9317	.9807	.4052
Within Groups	91.2048	96	.9501		
Eta = .1724		Eta Squared = .0297			

- - Description of Subpopulations - -

Summaries of SLOW
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.9100	1.1110	100
INDRESC	1.00		5.0000	.	1
INDRESC	2.00		4.0571	.9983	35
INDRESC	3.00		3.8947	1.2256	38
INDRESC	4.00		3.6923	1.0870	26
Total Cases = 100					

- - Analysis of Variance - -

Dependent Variable SLOW
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000	.	.0000	1
2.00		4.0571	.9983	33.8857	35
3.00		3.8947	1.2256	55.5789	38
4.00		3.6923	1.0870	29.5385	26

Within Groups Total		3.9100	1.1134	119.0031	100
Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.1869	3	1.0623	.8570	.4663
Within Groups	119.0031	96	1.2396		
Eta = .1615		Eta Squared = .0261			

APPENDIX D

- - Description of Subpopulations - -

Summaries of SOUNDIMA
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.2700	1.1088	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		2.5714	1.1450	35
INDRESC	3.00		2.0789	1.0496	38
INDRESC	4.00		2.1538	1.1204	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable SOUNDIMA
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		2.5714	1.1450	44.5714	35
3.00		2.0789	1.0496	40.7632	38
4.00		2.1538	1.1204	31.3846	26
Within Groups Total		2.2700	1.1026	116.7192	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	4.9908	3	1.6636	1.3683	.2571
Within Groups	116.7192	96	1.2158		

Eta = .2025 Eta Squared = .0410

- - Description of Subpopulations - -

Summaries of STRESS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.1100	1.1538	100
INDRESC	1.00		1.0000		1
INDRESC	2.00		2.0000	.9701	35
INDRESC	3.00		2.0526	1.1377	38
INDRESC	4.00		2.3846	1.3879	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable STRESS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		1.0000		.0000	1
2.00		2.0000	.9701	32.0000	35
3.00		2.0526	1.1377	47.8947	38
4.00		2.3846	1.3879	48.1538	26

Within Groups Total		2.1100	1.1549	128.0486	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	3.7414	3	1.2471	.9350	.4270
Within Groups	128.0486	96	1.3338		
		Eta = .1685	Eta Squared = .0284		

- - Description of Subpopulations - -

Summaries of SUMMARY
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.6500	1.1135	100
INDRESC	1.00		2.0000		1
INDRESC	2.00		2.7429	1.1464	35
INDRESC	3.00		2.6579	1.1455	38
INDRESC	4.00		2.5385	1.0670	26
Total Cases = 100					

- - Analysis of Variance - -

Dependent Variable SUMMARY
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		2.7429	1.1464	44.6857	35
3.00		2.6579	1.1455	48.5526	38
4.00		2.5385	1.0670	28.4615	26

Within Groups Total		2.6500	1.1259	121.6999	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.0501	3	.3500	2.761	.8425
Within Groups	121.6999	96	1.2677		
		Eta = .0925	Eta Squared = .0086		

APPENDIX D

- - Description of Subpopulations - -

Summaries of SYNONYM
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.8400	.9290	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		4.0571	.8726	35
INDRESC	3.00		3.8947	.8941	38
INDRESC	4.00		3.4615	.9892	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable SYNONYM
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		4.0571	.8726	25.8857	35
3.00		3.8947	.8941	29.5789	38
4.00		3.4615	.9892	24.4615	26

Within Groups Total		3.8400	.9124	79.9262	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	5.5138	3	1.8379	2.2076	.0922
Within Groups	79.9262	96	.8326		
Eta = .2540		Eta Squared = .0645			

- - Description of Subpopulations - -

Summaries of TALK
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.3000	1.3065	100
INDRESC	1.00		1.0000		1
INDRESC	2.00		2.2286	1.3080	35
INDRESC	3.00		2.3684	1.3032	38
INDRESC	4.00		2.3462	1.3548	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable TALK
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		1.0000		.0000	1
2.00		2.2286	1.3080	58.1714	35
3.00		2.3684	1.3032	62.8421	38
4.00		2.3462	1.3548	45.9846	26
Within Groups Total		2.3000	1.3185	166.8981	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	2.1019	3	.7006	.4030	.7512
Within Groups	166.8981	96	1.7385		
Eta = .1115		Eta Squared = .0124			

- - Description of Subpopulations - -

Summaries of TELEVISI
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.0100	1.1236	100
INDRESC	1.00		4.0000	.	1
INDRESC	2.00		3.2286	1.0314	35
INDRESC	3.00		2.8158	1.2271	38
INDRESC	4.00		2.9615	1.0763	26
Total Cases = 100					

- - Analysis of Variance - -

Dependent Variable TELEVISI
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.2286	1.0314	36.1714	35
3.00		2.8158	1.2271	55.7105	38
4.00		2.9615	1.0763	28.9615	26
Within Groups Total		3.0100	1.1220	120.8435	100

Source	Sum of Squares	d. f.	Mean Square	F	Sig.
Between Groups	4.1465	3	1.3822	1.0990	.3539
Within Groups	120.8435	96	1.2588		
Eta = .1821		Eta Squared = .0332			

APPENDIX D

- - Description of Subpopulations - -

Summaries of THINK
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.1600	1.0022	100
INDRESC	1.00		3.0000		1
INDRESC	2.00		3.2857	.9873	35
INDRESC	3.00		3.1579	1.0787	38
INDRESC	4.00		3.0000	.9381	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable THINK
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000	.	.0000	1
2.00		3.2857	.9873	33.1429	35
3.00		3.1579	1.0787	43.0526	38
4.00		3.0000	.9381	22.0000	26

Within Groups Total		3.1600	1.0114	98.1955	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	1.2445	3	.4148	.4056	.7493
Within Groups	98.1955	96	1.0229		
Eta = .1119		Eta Squared = .0125			

- - Description of Subpopulations - -

Summaries of UNDERSTA
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.9600	1.0723	100
INDRESC	1.00		5.0000		1
INDRESC	2.00		4.0857	.9194	35
INDRESC	3.00		3.9211	1.1480	38
INDRESC	4.00		3.8077	1.1668	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable UNDERSTA
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		5.0000		.0000	1
2.00		4.0857	.9194	28.7429	35
3.00		3.9211	1.1480	48.7632	38
4.00		3.8077	1.1668	34.0385	26

Within Groups Total		3.9600	1.0779	111.5445	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.2955	3	.7652	.6585	.5796
Within Groups	111.5445	96	1.1619		
		Eta = .1420	Eta Squared = .0202		

- - Description of Subpopulations - -

Summaries of VISUALIS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.3000	1.1677	100
INDRESC	1.00		4.0000		1
INDRESC	2.00		3.3429	1.1868	35
INDRESC	3.00		3.3947	1.1038	38
INDRESC	4.00		3.0769	1.2625	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable VISUALIS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		4.0000		.0000	1
2.00		3.3429	1.1868	47.8857	35
3.00		3.3947	1.1038	45.0789	38
4.00		3.0769	1.2625	39.8462	26

Within Groups Total		3.3000	1.1762	132.8108	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.1892	3	.7297	.5275	.6645
Within Groups	132.8108	96	1.3834		
		Eta = .1273	Eta Squared = .0162		

APPENDIX D

- - Description of Subpopulations - -

Summaries of WORKS
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			3.3100	1.0796	100
INDRESC	1.00		3.0000	.	1
INDRESC	2.00		3.4857	1.0396	35
INDRESC	3.00		3.2895	1.0882	38
INDRESC	4.00		3.1154	1.1429	26

Total Cases = 100

- - Analysis of Variance - -

Dependent Variable WORKS
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		3.0000	.	.0000	1
2.00		3.4857	1.0396	36.7429	35
3.00		3.2895	1.0882	43.8158	38
4.00		3.1154	1.1429	32.6538	26

Within Groups Total		3.3100	1.0860	113.2125	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	2.1775	3	.7258	.6155	.6066
Within Groups	113.2125	96	1.1793		
Eta = .1374		Eta Squared = .0189			

- - Description of Subpopulations - -

Summaries of WRITEP
By levels of INDRESC

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.0800	1.1253	100
INDRESC	1.00		2.0000	.	1
INDRESC	2.00		2.3714	1.1137	35
INDRESC	3.00		1.8947	1.2034	38
INDRESC	4.00		1.9615	.9992	26

Total Cases = 100

APPENDIX D

- - Analysis of Variance - -

Dependent Variable WRITEP
By levels of INDRESC

Value	Label	Mean	Std Dev	Sum of Sq	Cases
1.00		2.0000		.0000	1
2.00		2.3714	1.1137	42.1714	35
3.00		1.8947	1.2034	53.5789	38
4.00		1.9615	.9992	24.9615	26

Within Groups Total		2.0800	1.1213	120.7119	100

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	4.6481	3	1.5494	1.2322	.3023
Within Groups	120.7119	96	1.2574		
Eta = .1926		Eta Squared = .0371			

APPENDIX D

5. Chapter Four - Section 4.3: Research Question 2

Complete listing of "t" (t-tests) and "f" (ANOVA) statistics for significant results:

(Relate to pages 141-158 in main text)

1. Background Characteristics and General Strategic Behaviour:

		t	p	df	
Gender	x Factor 3	-2.42	.02	23.72	
	x Factor 5	2.21	.04	23.94	
Level	x Factor 2	-2.35	.02	98	
	x Factor 7	2.57	.01	98	
	x Frequency (Compensatory)	2.57	.01	98	
	x Total (Compensatory)	1.82	.07	98	
Style ¹	1	x Factor 5	2.37	.02	97
		x Frequency (Compensatory)	2.46	.02	97
		x Total (Compensatory)	2.24	.03	27.16
		2	x Frequency (Metacognitive)	-2.21	.03
	x Total (Metacognitive)		-2.11	.03	96.28
	3	x Total (Strategies)	2.53	.01	98
		x Frequency (Strategies)	2.20	.03	98
		x Total (Memory)	2.08	.04	98
		x Frequency (Memory)	2.56	.01	98
		x Frequency (Metacognitive)	2.19	.03	98
		x Total (Metacognitive)	2.73	.01	98
		x Total (Cognitive)	2.42	.02	98
x Factor 1		2.64	.01	98	
x Factor 5	2.21	.03	98		

¹ Style: preferred learning style - 1: global/analytical 2: intuitive/concrete
3: judging/perceiver 4: extrovert/introvert, 5: visual auditory

APPENDIX D

4	x Total			
	(Strategies)	2.50	.01	98
	x Frequency			
	(Affective)	2.09	.04	98
	x Total			
	(Affective)	2.27	.03	67.32
	x Frequency			
	(Social)	2.70	.01	71.98
	x Total			
	(Social)	2.33	.02	98
	x Total			
(Metacognitive)	2.31	.03	98	
x Factor 2	-4.41	.00	97	
x Factor 6	3.01	.01	98	
5	x Factor 2	-4.41	.00	72.60
	x Factor 5	-3.17	.00	97
	x Frequency			
	(Cognitive)	-2.62	.01	97
	x Frequency			
	(Memory)	-2.33	.02	97
	x Frequency			
	(Social)	-2.48	.02	97
	x Frequency			
	(Affective)	-2.95	.00	97
	x Total			
	(Affective)	-2.33	.02	97
	x Total			
	(Cognitive)	-2.86	.01	97
	x Frequency			
	(Strategies)	-3.35	.01	97
	x Total			
(Strategies)	-2.95	.00	71.35	
x Total				
(Memory)	-2.42	.02	97	
x Total				
(Meta.)	-2.34	.02	97	
x Total				
(Social)	-1.94	.06	97	
	F	p	df	
Degree	x Total	1.59	.17	93
	x Factor 6	2.09	.07	93
Enjoy ²	x Total			
	(Strategies)	5.54	.00	95

²Enjoy: level of enjoyment associated with learning German

APPENDIX D

	x Frequency			
	(Strategies)	8.46	.00	95
	x Total			
	(Cognitive)	8.37	.00	95
	x Frequency			
	(Cognitive)	12.71	.00	95
	x Total			
	(Metacognitive)	7.17	.00	95
	x Frequency			
	(Metacognitive)	8.07	.00	95
	x Total			
	(Affective)	3.21	.02	95
	x Frequency			
	(Affective)	3.87	.01	95
	x Factor 1	5.48	.00	95
	x Factor 2	14.88	.00	95
Motiv ³	x Total			
	(Strategies)	3.75	.01	96
	x Frequency			
	(Strategies)	4.03	.01	96
	x Total			
	(Cognitive)	3.87	.01	96
	x Frequency			
	(Cognitive)	2.88	.04	96
	x Total			
	(Metacognitive)	2.60	.06	96
	x Frequency			
	(Metacognitive)	3.93	.01	96
	x Total			
	(Memory)	2.20	.09	96
	x Frequency			
	(Memory)	2.64	.05	96
	x Frequency			
	(Social)	3.23	.03	96
	x Total			
	(Affective)	3.04	.03	96
	x Frequency			
	(Affective)	2.57	.06	96
	x Factor 1	3.99	.01	96
	x Factor 2	3.11	.03	96
	x Factor 4	3.35	.02	96
Pers ⁴	x Total			
	(Strategies)	8.12	.00	95

³ Motiv: level of motivation with regard to learning German

⁴ Pers: own perception of level of proficiency in German

APPENDIX D

x Frequency				
(Strategies)	7.20	.00	95	
x Total				
(Cognitive)	5.49	.00	95	
x Frequency				
(Cognitive)	4.68	.00	95	
x Total				
(Metacognitive)	6.64	.00	95	
x Frequency				
(Metacognitive)	6.93	.00	95	
x Total				
(Memory)	4.37	.00	95	
x Frequency				
(Memory)	4.48	.00	95	
x Total				
(Social)	2.52	.05	95	
x Frequency				
(Social)	2.94	.02	95	
x Factor 1	6.66	.00	95	
x Factor 2	7.25	.00	95	
x Factor 6	4.41	.01	95	

2. Background Characteristics and the Use of the 10 Strategies:

		t	p	df
Level	x Check	-1.85	.07	98
	x Sentence	-1.97	.05	98
	x Partner	-1.87	.06	98
Style	1 x Errors	-2.70	.01	97
	3 x Day	2.03	.05	98
	x Sentence	2.15	.03	98
	x Partner	2.69	.01	98
	4 x Associate	2.32	.02	98
	x Responsib	3.61	.00	76.67
5	x Partner	2.26	.03	98
	x Responsib	-2.79	.01	97
	x Relax	-2.56	.02	72.72
		F	p	df
Degræe	x Relax	2.55	.03	93
	x Partner	1.96	.08	93
Enjoy	x Errors	5.24	.00	95
	x Check	2.14	.08	95
	x Goals	6.40	.00	95
	x Responsib	8.53	.00	95

APPENDIX D

	x Relax	8.48	.00	95
Motiv	x Errors	2.15	.09	96
	x Check	4.35	.01	96
	x Day	2.49	.07	96
	x Goals	7.19	.00	96
	x Relax	3.78	.01	96
	x Responsib	3.82	.01	96
	x Sentence	3.07	.03	96
Pers	x Errors	2.43	.05	95
	x Check	2.11	.09	95
	x Day	3.46	.01	95
	x Goals	5.14	.00	95
	x Relax	2.53	.05	95
	x Responsib	4.79	.00	95
	x Sentence	2.65	.04	95
	x Alphabet	2.39	.06	95

3. Background Characteristics and Oral Proficiency:

		t	p	df
Level	x Indres	-3.01	.00	98
	x Group	-3.01	.00	98
Style 4x	x Indres	2.22	.03	98
	x Group	1.57	.12	98
	x Phonetic	2.22	.03	60
	x Idiomatic	2.52	.02	60
	x Fluency	1.69	.10	60
		F	p	df
Enjoy	x Indres	9.21	.00	95
	x Group	8.25	.00	95
Pers	x Indres	6.66	.00	95
	x Group	9.15	.00	95
Motiv	x Indres	6.52	.00	96
	x Group	7.12	.00	96
Degree	x Indres	2.28	.05	93
	x Group	4.52	.00	93

