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Approaches to Vocabulary Learning and Their Relationship to Success

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A Thesis

in

the TESL Centre

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Abstract

Students' vocabulary learning approaches were surveyed in two distinct learning environments; one where English was studied as a second language (ESL), and another where it was a foreign language (EFL).

A questionnaire, based to some extent on Sanaoui's (1992) work, was administered to 47 ESL and 43 EFL students. Learners were asked to indicate, among other things, the amount of time they usually spent on vocabulary learning, the extent to which they engaged in independent language study, the type of vocabulary learning activities they did on a regular basis, the frequency and elaborateness of their note-taking and reviewing efforts, as well as the frequency and elaborateness with which they used dictionaries. While students in the two settings exhibited significant differences in the use of some of the strategies, other parts of their strategic behaviour were strikingly similar. One of the major differences ESL and EFL students showed was on the use of direct and indirect vocabulary learning activities.

Cluster analysis, a technique used for finding relatively homogeneous subgroups in a population, identified 8 different profiles of student approaches to lexical learning. Some clusters exhibited a remarkably 'flat' profile in that they used either all or none of the strategies. The majority of learners, however, fell into the more saw-toothed profile clusters, exhibiting clear preferences for certain types of strategic behaviour.

Analyses were also conducted to determine a possible relationship between strategy use and achievement level. Students' performance on two tests, a Yes/No test assessing knowledge of academic vocabulary, and a cloze test assessing overall English proficiency, were compared for the 8 clusters. More frequent and elaborate strategy use was associated with higher levels of achievement, whereas no effort on the students' part was linked to poor performance. Results also suggested that TIME and learner INDEPENDENCE were the two measures most closely related to success in vocabulary learning and higher overall English proficiency.

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CHAPTER 1: INTRODUCTION

1.1. VOCABULARY IN SECOND LANGUAGE ACQUISITION RESEARCH

1.1.1. Vocabulary: A Central Part of Language Competence

While up to the mid-eighties it was fashionable to describe vocabulary as a "neglected aspect" and the "poor relation" of second language teaching and learning (Meara, 1981; Maiguashca, 1993), the nineties offer a remarkably different picture. Vocabulary is once again "in". It is a "current word" in language pedagogy, and, judging by the number of publications, research in the field is expanding by the minute.

This renewed interest in vocabulary is anything but unexpected and unjustified; it is the neglect of the past few decades that strikes one as rather paradoxical. A good number of researchers and scholars have noted a variety of very obvious and very practical reasons why lexical acquisition should be (and should long have been) one of the focal points in second language research (Levenston, 1979; McCarthy, 1984; Laufer, 1986; Maiguashca, 1993). For one thing, vocabulary knowledge has repeatedly been described as *the* most essential part of learners' second language competence. Both teachers and learners themselves are likely to agree with the position that a good amount of vocabulary, accompanied by minimal structural competence, makes for more efficient comprehension and communication than near-perfect grammar, accompanied by seriously lacking lexical competence. This folk wisdom is condensed by Wilkins (1972) in the following way:

There is not much value in being able to produce grammatical sentences if one has not got the vocabulary that is needed to convey what one wishes to say...While without grammar very little can be conveyed, without vocabulary *nothing* can be conveyed (p. 110).

It is not only common sense that lexical proficiency is a vital component of second language (and, for that matter, first language) competence. Empirical evidence coming from several lines of research heavily underscores this view.

First, recent findings lend support to the anecdotal evidence suggesting that errors and difficulties involving the lexicon may be greater and more persistent than those involving phonology or syntax. Laufer (1986) cites Meara (1984) who, referring to the work of Blaas, reports on a large collection of errors made by L2 learners at Utrecht University that shows lexical errors outnumbering grammatical errors by three or four to one. Similarly, Celce-Murcia & Rosensweig (1979) refer to a study by Henning (1973) whose results indicate that a high percentage, if not the majority, of errors committed in foreign language learners' compositions involve some aspect of lexical competence (or rather, the lack of it).

Another line of research emphasizing the persistence and gravity of lexical errors concerns native-speaker reactions to speech produced by second language learners. The findings of both Politzer (1978) and Johansson (1978, cited in Laufer, 1986) are consistent in pointing out that native speakers of English and German, respectively, consider lexical errors to be more serious and disruptive than errors involving any other aspect of language. Thus, native speakers appear to know intuitively that using the right word is the most important aspect of language competence.

Both anecdotal and empirical evidence suggests that L2 learners are in agreement with this position. Teachers can often hear their students emphasizing inadequate vocabulary knowledge as their major source of difficulty and frustration in language learning (Nation, 1990). Studies investigating learner behaviour and opinions have also found that L2 students "perceive the problems they have in making themselves understood both in conversation and in writing as primarily lexical in nature" (Sanaoui, 1992:5).

Yet another fact underscoring the significance of lexical learning concerns its continuity: to a far greater extent than the acquisition of phonology and grammar, vocabulary learning is an on-going, life-long process; new words are being encountered and learned long after the most difficult sound has been mastered and the most complex syntactic rule acquired.

1.1.2. From Neglect to Recognition

In light of all these facts emphasizing the centrality of lexical competence, it would certainly be reasonable to assume vocabulary to be one of the most researched areas in L2 education. However, until recently, this has been very far from reality.

Reviewing some of the classical books and articles on second language acquisition (up to the mid-eighties), Laufer (1986) concludes that the bulk of the literature "does not deal with vocabulary as if vocabulary was not part of second language acquisition" (p. 69). The few studies that do make mention of lexis do so only marginally, suggesting that "vocabulary has not been a good source of inspiration for investigators of language acquisition" (ibid:70). In a similar vein, Levenston (1979) concludes his review of the literature on vocabulary acquisition by

claiming that lexical competence has clearly been neglected: SLA investigators have, more often than not, simply ignored lexis, referring to "language' or 'interlanguage' when all they [meant was] 'grammar' or 'interlanguage grammar'" (p. 147).

A number of possible reasons have been put forward in the literature to explain the obvious lack of enthusiasm for research into vocabulary. Trends in linguistic theories and teaching methodologies are seen as two main streams of influence which contributed to vocabulary being relegated to a secondary status. Until recently, linguists showed a clear preference for grammar and phonology, which, as closed systems, "lend themselves to much more abstraction and generalization than vocabulary" (Laufer, 1986:70). Lexis, being an open set, subject to constant changes and various personal idiosyncrasies, was considered much more difficult to capture in any systematic way.

The major concerns of linguists went hand in hand with the interests of methodologists who were, until recently, preoccupied with the initial stages of L2 learning. Following a "get it right from the beginning" approach (Lightbown & Spada, 1993:79), they were largely focused on the teaching of grammar and considered vocabulary instruction to be relevant only at later stages of language acquisition.

Calls for more research on lexical competence have been repeated over the years in publications by Meara (1981), Laufer (1986) and Carter (1987), among others. Fortunately, perusal of the recent research on second language acquisition reveals that, from the mid-eighties onwards, lexical competence has received increasingly more attention, and today it constitutes one of the most steadily growing research areas in the field. Though many individual studies have examined various issues, the two major lines of research seem to concentrate on problems

involved in a) lexical acquisition and b) the assessment of vocabulary knowledge. Various aspects of lexical competence have been investigated under the umbrella of vocabulary acquisition. Some of the more prominent issues are: lexical instruction in L2; learners' lexical errors in L2 and learners' lexical strategies in L2 (see also Sanaoui, 1992).

The assessment of vocabulary knowledge, a deceptively simple and straightforward field, involves the evaluation of vocabulary size, as well as the measurement of the depth of vocabulary knowledge. Detailed discussion on some of these issues will be taken up in the next few sections.

Before examining in greater detail vocabulary learning and teaching and the many questions related to them, this seems like a good place to give a brief review of the status of vocabulary in some of the most influential teaching methods of ESL/EFL pedagogy.

1.2.VOCABULARY IN THE ESL/EFL CLASSROOM

There is a wide-spread agreement among both teachers and researchers that lexical instruction, implicit or explicit, is an integral part of any language program to the extent that it is practically impossible to teach any component of language (be it phonology, grammar or discourse) without making use of lexical items. In Nation's (1990) words, "giving attention to vocabulary is unavoidable. Even the most formal or communication-directed approaches to language teaching must deal with needed vocabulary" (p. 2). To be sure, the ways lexical instruction is defined, designed and carried out have varied tremendously from one teaching method to the next throughout the history of second language teaching as a profession.

Although the significance of vocabulary learning (see Chapter 1, section 1.1.1.) appears quite obvious and commonsensical, some teaching methods in the past seem to have been oblivious to it. Lexical competence was seldom considered in its own right, and most of the classroom practices rested on the assumption that the knowledge of words and their meanings did not require explicit teaching (Manguashca, 1993).

1.2.1. Focus on Words in the Early Days of L2 Education

A notable exception to this trend is the way vocabulary was treated in the second half of the nineteenth and the first few decades of the twentieth century. As Carter (1987) points out, "it is somewhat paradoxical that vocabulary teaching was central to early developments in the profession of English language teaching" (p.162). Although notorious for neglecting other aspects of language such as oral fluency and appropriacy of expression, the grammar-

translation method put considerable emphasis on learning new words. The techniques used, i.e. heavy doses of translation and memorization of vocabulary lists, might have been highly inadequate, and the purpose of vocabulary study rather limited (i.e. fostering the recognition of written words). The acquisition of new words was, nevertheless, recognized as an essential component of learning a new language and was explicitly focused on in the classroom. Similarly, the reading method of the 1920's, with its main goal of developing reading comprehension, saw vocabulary as a central part of language learning. However, since oral language was considered secondary, classroom practices revolved mostly around acquiring and practicing words through dictionary consultation and translation exercises.

With the direct method, the pendulum seems to have swung to the other extreme. Translation and mother tongue grammar explanations were banned from the classroom and emphasis was placed on the spoken language. It was "assumed that the students [would] acquire vocabulary in context as an integral part of each lesson" (Celce-Murcia & Rosensweig, 1979:241). Although direct vocabulary teaching did not feature prominently, unfamiliar lexical items were, nevertheless, dealt with when they hampered comprehension or communication. A wide variety of L2-based techniques, including paraphrase, synonyms and demonstration, was used to explain the meaning of such words.

1.2.2. Structuralism

Dramatic changes took place in the 1930's. With the advent of structuralism, the tendency in language teaching was to "push vocabulary into the background and to relegate its importance to a secondary level" (Carter & McCarthy, 1988:40). The audiolingual method

deliberately deemphasized the teaching of vocabulary and restricted it to the minimum in the initial stages of language learning (Brooks, 1964). The focus was on the teaching of structural paradigms as it was felt that "thorough control and a feeling of confidence in the use of a limited number of items makes for more progress than an uncertain acquaintance with a large number of words" (Fries, 1945, cited in Celce-Murcia & Rosensweig, 1979:241).

Even in the 60's and up to the 70's, lexis was considered something peripheral to language teaching, "an irritating irregularity in an otherwise ordered grammar" (Carter & McCarthy, 1988:40). Being so ubiquitous, vocabulary was seen as something learners would "pick up" along the way, tease out from various forms of exposure to the target language, most notably reading and listening activities. Lexical learning was left for the students to come to grips with alone, while the bulk of the classroom time was devoted to the teaching of what was considered much more significant - sounds, inflectional paradigms and sentence patterns. When occasionally a larger number of new words did find their way into the syllabus, they were often treated "simply as examples for slot-and-filler practice and not in terms of their lexical relations or lexicogrammatical dimensions" (McCarthy, 1984:13).

1.2.3. Current Teaching Methods

Despite the renewed interest in vocabulary in the course of the 80's and 90's, much of what has been said above is typical of quite a lot of ESL/EFL classrooms even today (Oxford & Crookall, 1990). The focus of attention may have shifted from grammatical rules to notions and functions, and, with the advent of communicative language teaching, to meaningful interaction.

However, little change has occurred in the area of vocabulary instruction. In very few classrooms are students exposed to direct vocabulary teaching, and even in those few classrooms where there is explicit focus on words, they are seldom taught in an adequate and systematic way (Oxford & Scarcella, 1994). "Vocabulary instruction" may still entail nothing but providing or asking for L1 translations for new lexical items or having students underline unknown words and look them up in a dictionary without further help or guidance.

Reviewing some current approaches to syllabus design and their treatment of vocabulary, Sinclair and Renouf (1988) conclude that many of them still lack rigour in the selection and organization of lexical content:

The approach taken to vocabulary has generally not been systematic and ... there has been little coordination in establishing targets. The vocabulary is regarded merely as the means of exemplifying other features of the language... Therefore it is not normally organized in and for itself, and receives only partial attention (p. 142).

What may, at least in part, explain these often inadequate classroom practices is our relatively scant knowledge of the nature of vocabulary acquisition itself. Although research into this complex field has been underway for quite some time now, there is still a long way ahead of us before definite conclusions and implications are arrived at (Meara, 1994a). A number of factors contribute to the complexity of the question, among which are the context of vocabulary instruction and the role of individual differences in lexical development. These issues are the topic of the next two sections.

1.3. DIRECT AND INDIRECT VOCABULARY LEARNING

The view that there are two basic, categorically different ways of learning, one being the incidental or subconscious, and the other the intentional or conscious, is not specific to the area of vocabulary acquisition. Although the apparent success of the communicative approaches has made it clear that what should be highlighted is indeed meaningful interaction, the question as to whether it should or need not be supplemented by more direct, more explicit activities is still open to debate. As noted by Lightbown, Halter & Meara (in preparation), "most of this debate has taken place around the teaching and learning of grammatical features" (MS p. 2). However, discussion concerning the relative importance of implicit vs. explicit, incidental vs. intentional, indirect vs. direct learning has recently been taken up in the area of lexical learning as well.

1.3.1. Incidental Vocabulary Acquisition in L1 Research

The view that incidental learning from written contexts accounts for the bulk of vocabulary growth was first put forward by researchers in the field of L1 reading and vocabulary learning. In their extensive research on L1 vocabulary, Nagy & Herman (1987) point out the fact that very little explicit vocabulary instruction occurs in most classrooms, suggesting that children must be acquiring most of their L1 words from source(s) other than vocabulary-targeted instruction. This leaves Nagy & Herman with the conclusion that "incidental learning of words from context while reading is ... the major mode of vocabulary growth" (p. 24). While admitting that this is indeed a 'default argument', since "learning from context is assumed

to be effective because nobody can figure out where else children could be learning all those words" (p. 24), the authors, nevertheless, adhere to the view that "explicit vocabulary instruction, even at its best, cannot produce substantial gains in overall vocabulary size or in reading comprehension" (p. 19).

1.3.2. Incidental Vocabulary Acquisition in SLA

Convinced that second language acquisition should be treated as a phenomenon analogous to the acquisition of a first language, some SLA researchers were all too eager to jump on the bandwagon advocating exposure-based incidental vocabulary learning. Since lexical growth in L1 appeared to occur so naturally, some L2 researchers, notably Krashen (1989), argued for the position that, provided learners are exposed to enough 'comprehensible input' through reading, vocabulary acquisition would take care of itself in L2 as well.

Drawing heavily on L1 vocabulary research, Krashen (1989) maintains that deliberate and conscious efforts make only insignificant contributions to lexical growth. He claims that direct vocabulary instruction is not only unnecessary but also boring. The paper concludes with a very strong and straightforward statement summarizing Krashen's basic belief: "My suspicion is that reading is not simply a way to develop vocabulary,... it is *the only way*" (p. 459).

1.3.3. Some Problems with Exclusive Focus on Incidental Learning

The view of the superiority of reading/exposure-based, indirect vocabulary instruction has recently been challenged by a number of both first and second language acquisition researchers (Beck, McKeown & Omanson, 1987; Nation, 1990; Oxford and Crookall, 1990; Coady, 1993; Oxford and Scarcella, 1994; Hulstijn, Hollander & Greidanus, 1996). While acknowledging that a large portion of lexical learning does indeed take place incidentally, through fully contextualized activities, these scholars put forward a view that for some learners in some situations, context-embedded, indirect vocabulary learning may not be enough. Reading- and listening-based vocabulary learning have their obvious advantages, and should, therefore, be retained as one possible route to lexical competence. However, more and more research points to the conclusion that the exclusive reliance on incidental vocabulary learning has a number of drawbacks as well.

First, as Meara, Lightbown and Halter (1997) note, it seems unreasonable to assume that whatever students need to learn will be readily available in the context of their studies. Furthermore, even if learners are exposed to the needed lexical items, some of them simply fail to spontaneously notice and learn the meaning of previously unknown words. As Hulstijn, Hollander & Greidanus (1996) point out, there are several reasons for this phenomenon:

- Students may only pay attention to the overall meaning of the text, in which case, unless absolutely crucial to the comprehension of the message, unknown words will pass unnoticed.
- Students may erroneously believe that they know words they are not familiar with.
- Even when learners notice unknown items, they may decide to ignore them.

- The meaning of unknown words often cannot be inferred from the context.
- Even in cases when learners do take the trouble to look up some unknown words in the dictionary or (successfully) guess their meaning from the context, a single encounter with a lexical item will seldom lead to its acquisition.

In summary then, the quality of the context, the nature of the task, the number of exposures, the salience of the vocabulary item in question, as well as the amount of attention it requires and captures make the task of learning new words incidentally from heavily contextualized environments far less straightforward and, for some learners, far more difficult than we would like to think.

1.3.4. A Combination Works Best

Since "incidental vocabulary learning during reading does indeed take place but only incrementally and in small quantities" (Hulstijn, et al., 1996:327), it seems only reasonable to attempt to supplement it with more direct, more explicit learning activities.

Researchers working in the areas of both L1 and L2 vocabulary acquisition have raised their voice in support for this position (Beck, McKeown & Omanson, 1987; Graves, 1987; Hague, 1987; Nation, 1990; Oxford & Crookall, 1990; Oxford & Scarcella, 1994; Lawson & Hogben, 1996). While acknowledging that no instruction can aim at teaching all or even most of the words learners need, Beck, et al. (1987) emphasize that what they termed "Rich Vocabulary Programs" have several important contributions. Besides allowing for multiple exposures to the target items, such programs encourage active learner participation and ensure opportunities for practice in a variety of contexts.

All these features are basic requirements for *deep processing*, an acquisitional strategy which, according to many scholars, enhances the results of any learning. As early as 1972, Craik & Lockhart argued that the more effectively new words were elaborated during acquisition, the more easily they would be learned. In a similar vein, Carter (1987) states that "the more words are analyzed or are enriched by imagistic and other associations, the more likely it is that they will be retained" (p. 155). A recent empirical study by Lawson & Hogben (1996) provides clear support for this view. Investigating the question of what strategies students used in the process of learning new words, the researchers noted that, albeit infrequently used, elaborative strategies were associated with more success in recall.

Such elaborative activities could involve both fully contextualized, as well as more specifically vocabulary-targeted procedures. Besides ensuring students' active involvement in and focused attention on vocabulary learning, elaborate activities have yet another important function: they can enable students to cope with new words once outside the L2 classroom and keep on building their lexical competence throughout their lifetime (Laufer, 1986).

Furthermore, as Oxford and Scarcella (1994) point out, some, especially adult and more advanced, L2 learners may not have the time to go through the relatively slow process of exposure-based vocabulary acquisition and learn all the lexical items they need through osmosis. More deliberate procedures, paired with more specifically vocabulary-targeted activities, can help such learners save both time and effort in their lexical acquisition. However, evidence for the view that more direct vocabulary focus may be beneficial for younger learners as well comes from several studies reviewed by Harley (1996). She concludes her introduction by saying that "incidental learning of L2 vocabulary through communicative exposure to the language is

usefully complemented, even among children, by a variety of analytic activities that engage the learners' interest and serve to deepen their vocabulary knowledge in different ways" (p.10).

More direct vocabulary learning activities are also important when we consider "the needs of students who would have to function well in academic contexts with constant high literacy demands" (Coady, 1993:4). As noted by Saville-Troike (1984), "vocabulary knowledge in English is the most important aspect of oral English proficiency for academic achievement" (p. 216). Second language learners in academic contexts are often faced with masses of new words they have to learn practically overnight in order to catch up with their native-speaking peers. It seems then that for them to wait for the results of incidental vocabulary acquisition to 'kick in' would mean saying good-bye to their academic studies.

All the above-mentioned cases and contexts seem to support the view that, rather than substituting indirect, fully-contextualized learning for explicit vocabulary instruction, the two methods should be combined as they work best when supplementing each other. However, before any firm pedagogical suggestions can be made concerning the relative efficacy of either kind of activities, it is necessary to gain a better understanding of what learners actually do to facilitate their vocabulary learning and whether what they do helps them be successful in it. The next chapter is devoted to the review of the research into this area.

CHAPTER 2: LEXICAL ACQUISITION: FOCUS ON THE LEARNER

Parallel to the explosion of interest in lexical acquisition, another prominent line of research began to develop in the course of the 1980's. With new language teaching methods such as the communicative approach gaining ground, both teachers and researchers started considering the language learning task from the learner's point of view and putting the learner's contribution, as well as responsibility, in the spotlight.

By the mid-nineties, this movement has grown into a whole new research area within L2 education: research into learner strategies. By exploring and describing what more and less successful learners do in their language studies, researchers hope to come one step closer to "defining how learners can take charge of their own learning and classifying how teachers can help students become more autonomous" (Wenden & Rubin, 1987:140). Underlying this endeavour is the assumption that one of the ultimate goals of any second language teaching is a learner who is aware of his/her abilities and who is capable of making choices, initiating action and taking responsibility for his/her language development once outside the classroom.

2.1. DESCRIPTIVE STUDIES OF 'GOOD LANGUAGE LEARNERS'

The notion that second language acquisition is very much intertwined with individual differences in personality, learning style, aptitude and attitudes seems to have made intuitive sense to teachers and scholars even before empirical data were collected to support it.

Early descriptive research into the field was undertaken with the motivation of documenting the language learning activities of successful learners so that those less successful could learn from them "the secret of success", as it were. One such study, laying the foundations for future strategy research, is the description of the 'good language learner' by Naiman, Fröhlich, Stern & Todesco (1978). While acknowledging the uniqueness of each language learning career, Naiman, et al. did manage to identify many characteristics common to most successful learners. In short, they describe the good language learner as "someone who actively involves himself in the language learning process, ... finds ways to overcome obstacles, whether linguistic, affective or environmental, monitors his own performance, studies, practices, and involves himself in communication" (p. 17).

Although Naiman, et al. (1978) set out to describe their subjects' language learning strategies in general, they also documented some techniques used in more specific areas of language study. Interestingly, they noted that "the greatest number of techniques appeared in the area of vocabulary acquisition" (p. 15). Most of them involved the following type of activities:

- using a dictionary (reading it, looking up words in it, creating one's own);
- writing down words (making index cards, lists of words, vocabulary charts);

- reviewing vocabulary records (including various repetition techniques);
- using new vocabulary items (constructing structures/sentences with the new words);
- various vocabulary games (grouping words according to semantic fields, thinking of words with the same ending, etc.).

Subsequent work on language learning strategies in general (Wenden & Rubin, 1987; O'Malley & Chamot, 1990; Oxford, 1990), as well as vocabulary learning strategies in particular (Cohen & Apeh, 1980, 1981; Brown & Perry, 1991, Lawson & Hogben, 1996) seems to be in agreement with Naiman, et al.'s findings. Strategy books directed at both teachers (Wenden & Rubin, 1987; O'Malley & Chamot, 1990) and learners (Ellis & Sinclair, 1989) emphasize the importance of self-awareness, self-monitoring, organization and active involvement of the learner in the acquisition process. The teacher's role is seen mainly in making learners aware of the potential of various strategies and in helping learners identify those that suit them best. The significance of this latter point is underscored by O'Malley & Chamot (1990) who note that in their research, "more effective students used a greater variety of strategies and used them in ways that helped the students complete the language task successfully. Less effective students not only had fewer strategy types in their repertoires but also frequently used strategies that were inappropriate to the task" (p.140).

2.2. FOCUS ON STRATEGIES IN VOCABULARY LEARNING

In their studies Cohen and Aphek focused primarily on the strategies students used in vocabulary acquisition (1981) and on the role of mnemonic associations in the retention of lexical items over time (1980). Observing learners of Hebrew as a second language, the researchers documented the use of several kinds of associations. Some of them were cross-linguistic as learners associated words in their L2 with words in their L1 by similarities in either sound or meaning. Other associations were made exclusively within the domain of the target language; while yet others involved linking new Hebrew words to proper names, situations or mental images of the word. Cohen & Aphek (1980) conclude, albeit tentatively, that mnemonic procedures in the form of various associations facilitate vocabulary learning and its retention over time.

In line with Cohen & Aphek's conclusion are the findings obtained by Lawson & Hogben (1996) in their recent study investigating the extent to which learners employ elaborate strategies in addition to the common technique of repetition. The four basic categories into which the researchers classified student strategies were: repetition, word feature analysis, simple elaboration and complex elaboration. A wide variety of procedures was brought together under the label of elaboration. They included translation, forming sound links, inter- and intralingual associations, giving paraphrases and using the context in various ways. Their results show that "not only did students use repetition in almost two thirds of the opportunities, but repetition was used on most of the words by most of the students" (p.120). Word feature analysis was the least frequently selected strategy. Elaborate activities, although used relatively rarely, did result in better recall.

Comparing the strategy use of good and poor students (as determined by their recall scores), Lawson & Hogben (1996) underscore the findings of some earlier research on general language learning strategies, namely that "the single feature most obviously distinguishing the two groups is the total amount of strategy use: The high-scoring group recorded more than twice the number of word-by-strategy instances" (p. 123). Moreover, successful students not only used more strategies on average, they also employed a wider variety of procedures, and used them more consistently than their less successful peers.

Other studies, such as Brown & Perry (1991), provide information on what happens when learners are trained to use some specific mnemonic procedure, but they reveal little about the techniques that students themselves would normally use outside the context of the laboratory experiments. Small wonder then that we still understand little about how different learners acquire new words, what techniques work best for whom and why. Research pinpointing the fact that learners approach the task of vocabulary acquisition in different ways has certainly underscored the significance of individual differences in lexical learning (Levenston, 1979; Meara, 1993; Rohrer, 1991). It has also made us aware of the fact that we can no longer base our classroom practices on the assumption that simply letting students "pick up" the vocabulary they need from the input will be an adequate and successful route to lexical competence for all of them.

However, the extent to which students spontaneously adopt effective vocabulary learning practices is still an empirical question waiting to be investigated in greater depth and with greater rigour. The research that has been undertaken to shed some light on the issue will be the topic of the next section.

2.3. LEARNERS' APPROACHES TO VOCABULARY STUDY

2.3.1. Ahmed's Research

Pioneering work in the area focusing solely on learners' approaches to vocabulary study was undertaken by Ahmed (1989). The central question in his research concerned the identification of the differences between 'good' and 'poor' learners in the way they approached lexical learning. Reviewing previous work on learners' strategies, Ahmed states that most of it did not reach far in its conclusions and recommendations because it "has concentrated on the holistic macro-strategy level, rather than the atomistic micro-strategy level, and this has led to the similarities between good learners being inflated" (p. 4). Consequently, Ahmed was interested in identifying the types of micro-strategies used in vocabulary acquisition and the frequency with which they were used.

Three hundred Sudanese learners of English were given the task to learn fourteen new words. Think-aloud procedures were used to elicit information on the kind of activities they employed to aid their lexical learning. Data from the think-alouds were supplemented by the researcher's observations concerning strategies that were not easily verbalized, for instance, when learners wrote down words or reached for a dictionary without talking about their actions or intentions. Also, as another supplementary tool for data gathering, individual interviews were conducted during which participants were asked about their note-taking habits, dictionary use, associative strategies and sources of new lexical information. Analyses indicated that a total of 38 types of micro-strategies were used.

Results were then subjected to a statistical technique called cluster analysis which produced five clusters of subjects. Interestingly, three clusters clearly emerged comprising mainly good learners (achievement determined by scholastic records), whereas poor learners were distributed in the remaining two clusters. As the next step in his research, Ahmed analyzed the nature of the clusters in terms of the micro-strategies that characterized the students in them. His general conclusion was that good learners showed greater awareness of what they could learn about new words, and of learning words in context. Not only did they use more strategies overall, but they also relied more on different strategy types.

Ahmed (1989) is, however, quick to point out that the two main categories, i.e. those of good and poor learners, are far from being completely homogeneous; "different subtypes can be distinguished for both good and underachieving learners" (p. 9). In his detailed analysis, Ahmed tries to assess the characteristics of the five groups. While some of his conclusions are plausible, there are also a few that do not seem to be supported by the given data. For instance, according to Ahmed, the members of cluster 1 typically use a bilingual dictionary as an information source. However, the diagnostic node, indicating how typical a given strategy is, is neutral for that cluster and not positive. Similarly, although Ahmed claims that one of the characteristics of cluster 3 was overlooking unknown words, the given diagnostic node does not allow for such an interpretation.

Admittedly, the use of cluster analysis enabled Ahmed to find more subtle differences between groups, and it could also have allowed him to break away from the stereotypical dichotomous categorization of good vs. poor learners. However, instead of contrasting the five

clusters among themselves, the researcher still opts for the good vs. poor learner dichotomy as a starting point in his interpretation of the data. Employing the traditional polarization both defeats the purpose of using cluster analysis, and masks some interesting tendencies. One such tendency is the similarity between a cluster of good learners and another one comprising underachievers. On three out of the six macro-strategies, the two clusters exhibit remarkably similar patterns of strategy use. There are also several instances of micro-strategies that are common to four of the five clusters, a case in point being two strategies involving note-taking. All this goes to show that trying to make a clear-cut distinction between good and poor learners (at least in the case of these students) may be unsubstantiated even at the micro-strategy level. Good and poor learners do have strategies in common, but they also diverge in their strategy use, and this divergence is anything but straightforward and clearly patterned.

The reduction of all strategies to binary categories (used vs. not used) greatly simplified the data. As Ahmed acknowledges, "it is possible that finer distinctions could have been lost" (p. 12) in that process. Sanaoui (1992, 1995), reviewed in the next section, tried to fill in the gap in this respect.

2.3.2. Sanaoui's Research

Adopting the principles of ethnographic research, Sanaoui (1992, 1995) set out to document in a detailed and thorough way the various approaches learners employ and the different mnemonic procedures they use to facilitate their lexical learning. The aim of this project was to show how strategies might be important pedagogically. If student approaches which led to successful vocabulary learning could be isolated, then this might serve as an important aid to improving vocabulary teaching and learning in the classroom. In Sanaoui's research, a learner's approach to vocabulary learning was defined as "a learner's study habits for learning new words or phrases" (Sanaoui, 1995:15), whereas mnemonic procedures referred to practices that "learners [applied] to a specific lexical item in order to facilitate its retention" (ibid.).

In an exploratory study, participants were asked to keep track of their vocabulary learning habits, monitor and document whatever they were doing in order to expand their lexicon and help themselves remember new words. Over a six-week period, 50 adult learners in an ESL course kept daily written records of their learning activities. In addition, they were also provided with opportunities to discuss features of their individual approaches with other students during "sharing sessions", held once a week for 6 weeks. These sessions were organized with two goals in mind. Besides helping students develop a better awareness of what they were doing in their vocabulary study, they were also geared at providing them with an opportunity to exchange useful information on what other learners did in order to cope with the task of lexical learning.

Data from student reports, supplemented by the researcher's observations, were compiled into a vocabulary learning profile for each student. According to these profiles, Sanaoui (1992) concluded that students seemingly fell into two groups: those with a "structured" approach

organized the task of vocabulary learning while those with an "unstructured" approach did not appear to work on lexis in any obviously organized way. Learners adopting a structured approach "had developed a routine for tackling vocabulary study, set particular goals for themselves, kept systematic records of new words as they appeared in pedagogical materials, and reviewed these records regularly" (Sanaoui, 1995:17). Learners who adopted an unstructured approach lacked most or all of these characteristics; "they seemed to approach words 'as they came', with no clear routines or intentions" (ibid.).

Since these findings seemed interesting enough to be explored further in different contexts Sanaoui (1992) conducted two case studies on learners' approaches to vocabulary. These studies aimed at verifying the existence of the two approaches and at further describing their characteristic features. As in the previous exploratory research, these two case studies also involved students (4 studying English as a second language, 8 learning French as a second language) monitoring and documenting, on a daily basis, their vocabulary study. Students' notes were supplemented by an interview during which further details were elicited concerning the frequency and elaborateness of their reported activities.

Findings from the two case studies essentially corroborated those obtained in the exploratory research. Six students shared a common organized way of dealing with lexis which differed from the approach taken by five other participants who were conspicuously less systematic in their practices. One learner exhibited characteristics common to both approaches but conformed to neither and was, consequently, left unclassified.

According to Sanaoui, the two identified approaches to vocabulary learning differed in five major aspects. Table 1, adapted from her dissertation, presents them in a concise way:

Table 1: Features of the two approaches to vocabulary study (adapted from Sanaoui, 1992)

Structured Approach	Unstructured Approach
<i>Opportunities for learning vocabulary</i>	
self-created	reliance on course
independent study	minimal independent study
<i>Range of self-initiated activities</i>	
extensive	restricted
<i>Records of lexical items</i>	
extensive	minimal
(tend to be systematic)	(tend to be ad hoc)
<i>Review of lexical items</i>	
extensive	minimal
<i>Practice of lexical items</i>	
self-created opportunities	reliance on course
in and outside classroom	

On the basis of the data resulting from this exploratory research, Sanaoui designed a questionnaire on learners' approaches to vocabulary. Items included questions about the amount of time students usually spent on lexical learning, about the kinds of activities they did both in and outside the second language classroom to help themselves retain words, about their record-keeping habits concerning the lexicon, as well as their opportunities for practicing newly learnt words. This questionnaire was then used in a larger-scale classroom study involving 74 students of French to determine whether learners' approaches were in any way related to their actual

lexical knowledge. According to their responses on the questionnaire, Sanaoui identified students as following a structured approach if they indicated that:

- 1) they spent three or more hours per week on independent language study;
- 2) they engaged in three or more self-initiated learning activities;
- 3) they kept extensive records of vocabulary items they were learning;
- 4) they reviewed those records occasionally or often; and
- 5) their opportunities to practice new words came both from classroom-related and self-initiated activities.

Conversely, students whose study habits did not conform to any of these criteria were classified as following an unstructured approach. The questionnaire was successful in classifying the majority of students into the two established categories. There were, however, four students who showed characteristics of both approaches, and Sanaoui opted for eliminating them from all subsequent analyses. Such a decision may have been triggered by some concerns over data analysis; nevertheless, it leaves the reader pondering a few unanswered questions, especially as it presents a sharp contrast to Sanaoui's (1995) own words, namely that "these two approaches can be conceptualized as two extremes of a continuum on how much vocabulary learning is 'organized' or structured by individual learners" (p. 24). Admittedly, the extent to which learners organize their vocabulary learning is by no means a matter of an either/or approach. While acknowledging this in her discussion of the findings, Sanaoui still analyzes her data and groups her students into two polarized categories not allowing for any 'middle' position between the two extremes.

To measure students' vocabulary knowledge, Sanaoui administered a vocabulary test, modelled after the Vocabulary Knowledge Scale developed by Wesche and Paribakht (for further details on this test, see Chapter 3, section 3.2.2.1.). The test was to an extent individualized, as it tested each learner on the items he or she had previously listed as recently acquired. However, the test was also generic, as it asked all participants for the same information concerning those words.

When students' actual performance on the vocabulary test was compared with their approach, results indicated that learners with a structured approach were more successful in acquiring new vocabulary items than those learners who followed the unstructured approach. The structured group of 17 students had a mean score of 81, with a standard deviation of 14.22, whereas the 53 unstructured learners had a group mean of 63, with a standard deviation of 18.41. As a conclusion to her research, Sanaoui states that learner approaches are indeed an important factor in predicting the outcome of their vocabulary studies and that a structured approach is related to enhanced lexical acquisition.

2.3.3. Lessard-Clouston's Replication

In a study replicating the most essential steps of Sanaoui's research, Lessard-Clouston (1996) failed to find any correlation between students' approaches to vocabulary learning and their scores on a vocabulary knowledge measure. The participants of this study were fourteen students learning English in Ontario. They were enrolled in a TOEFL preparation course trying to

advance their English proficiency level to meet the entrance requirements of their prospective universities.

Like Sanaoui, Lessard-Clouston administered a questionnaire to find out about the vocabulary learning activities that his students engaged in outside the L2 classroom. Like Sanaoui, he used a modified version of the Vocabulary Knowledge Scale for assessing the students' vocabulary knowledge. However, unlike Sanaoui, Lessard-Clouston attempted to avoid the elimination of students from the study. For that purpose, he established a middle-of-the-road category of a semi-structured approach which encompassed learners who adopted four out of five features characterizing the structured approach. However, apart from not having to leave out students from the analyses, little was achieved by establishing a third category. The mean scores obtained on the vocabulary test were almost identical for the structured, semi-structured and unstructured groups. In other words, students' membership in a particular group did not seem to predict their performance on the vocabulary test.

The most interesting results in this study emerged when students' scores on a test of overall language proficiency (the TOEFL test) were compared to their vocabulary learning approach. Contrary to Lessard-Clouston's expectations, the structured group actually showed the lowest overall proficiency, whereas it was the unstructured group that received the highest TOEFL scores. Taken individually, three out of the four students in the unstructured group received a score of 90% or higher on the TOEFL test (scores converted into percentages), whereas only two out of the seven students in the semi-structured, and none of the three in the structured group scored that high.

2.3.4. The Two Studies Contrasted

Seeing the discrepancy in the findings obtained by these two researchers one cannot help wondering about the possible reasons behind it. Could it be the case that students adopt such a wide variety of approaches to lexical learning that a simple structured/ unstructured dichotomy is unable to account for them? Are there any other dimensions by which we could categorize approaches?

Although the two research designs share enough characteristics to be comparable at a general level, they also differ in several important points. Firstly, while Sanaoui's study involved 74 students, Lessard-Clouston's research followed a case-study format with only 14 learners participating. Lessard-Clouston assessed his subjects' performance on two different measures, one pertaining to vocabulary knowledge, the other assessing general language proficiency. Sanaoui, on the other hand, compared her subjects' approaches to their scores on the vocabulary test alone. Furthermore, Sanaoui simply ignored those students who did not clearly conform to either the structured or the unstructured approach. On the other hand, Lessard-Clouston did take them into account by establishing a third category for students who adopted four out of the five features typical of the structured group. However, the question still remains: what about students who share only two or three characteristics with the structured group? Are they to be treated the same way as learners who differ from it in all five features? It seems that the simple structured/unstructured (+semi-structured) categorization may leave a range of differences between learners unattended. A different way of grouping students, such as the use of cluster analysis (see Chapter 3, section 3.6.), may capture these nuances in a more effective manner.

Last, but probably most importantly, the two studies differed in terms of the context in which their respective participants were learning the target language. The seventy-four students in Sanaoui's study were learning French in British Columbia, a predominantly anglophone environment in Western Canada. Although these students may have had some contact with the French language outside their classes through French television, radio shows and newspapers, the language of the overwhelming majority of their daily activities was English. Thus labelling the environment French as a second language (FSL), as Sanaoui did, might be somewhat misleading since such conditions for learning are much more comparable to those arising in a foreign language learning situation. In contrast, Lessard-Clouston's subjects were studying English in Ontario where they had the opportunity to be immersed in the target-language community.

In light of this difference in the language learning environment, the discrepancy in the two sets of findings should probably not be considered a discrepancy at all. As they had little opportunity to learn and practice French outside their language classes, Sanaoui's subjects were "compelled" to rely more on their own organizational skills if they wanted to succeed in their language study. Lacking extensive exposure to the target language, it is not surprising that successful learners were those who tried to compensate for it by using a wider array of learning strategies.

On the other hand, Lessard-Clouston's subjects, living and studying in an English-speaking environment, may have had plenty of opportunities to expand their vocabulary knowledge in more implicit and indirect ways. It is not unusual then that the systematicity and elaborateness of students' approaches to vocabulary study bore little relation to their lexical knowledge, and that the relationship between strategy use and success was the opposite of the one Sanaoui found.

2.4. RATIONALE FOR THIS STUDY

Sanaoui (1992, 1995) pioneered the documenting of learners' strategies and activities in vocabulary study. Her research, and that of Lessard-Clouston (1996), has shown that documenting how students go about learning new words is a project worth undertaking for at least two reasons. From a theoretical viewpoint, it could allow us to gain some insight into the nature of vocabulary acquisition. From a more practical viewpoint, having students reflect on what they do in their vocabulary study could raise their awareness of how they learn new words and serve as a springboard for class discussions of helpful strategies that would allow them to make the most of their time and effort in lexical learning.

However, previous work has also brought out a note of caution against relating strategy use to success in language learning too readily and in all situations. Not all strategies are equally beneficial for all learners and for all language learning tasks. Also, as Sanaoui's and Lessard-Clouston's research strongly suggests, the context of language learning, traditionally referred to as second vs. foreign language learning environment, may influence the relationship between students' approaches to vocabulary study and their lexical knowledge. Since the two studies were not set up to investigate the exact role of the learning environment, the conclusions they permit are speculative at best. Clearly, more research is needed to shed further light on this question.

In the present study, students' approaches to vocabulary learning were investigated with the possible influence of the learning context in mind. The study was designed to document what two groups of students learning English did to facilitate their lexical learning, and to examine how

the approach they had adopted related to their vocabulary knowledge, as well as to their overall English proficiency. Students in the two groups were largely comparable in terms of their educational background and level of English proficiency. However, they were learning English in two very different settings. While learners in one group (referred to as the ESL group) were exposed to the language on a daily basis both in and outside of their English classes, students in the other group (referred to as the EFL group) had access to English almost exclusively in their classes held several times a week. A more detailed description of the participants, including some basic biographical data, appears in Chapter 3.

2.5. RESEARCH QUESTIONS

The general research question addressed in the study was: How do students learning English as a second/foreign language approach the complex task of vocabulary learning? Specific questions were as follows:

1. Do students' vocabulary learning strategies differ in any significant way with regard to the different learning environments (English as a second/foreign language)?
2. Do some learners exhibit a clear preference for direct, explicitly vocabulary-targeted activities, as opposed to indirect, heavily contextualized vocabulary study? If yes, does this preference bear a relationship to the environment in which students are learning the language?
3. Can students' approaches to vocabulary learning be characterized in terms of Sanaoui's structured/unstructured groups (with or without the addition of a semi-structured category)?

category)? If not, can students be grouped according to the vocabulary learning strategy or set of strategies that dominates their approach?

4. How does the strategic approach that students adopt relate to their performance on the Yes/No test of vocabulary size?
5. How does the strategic approach that students adopt relate to their overall English proficiency as measured by a cloze test?

Bearing in mind the findings of the two previous studies that investigated approaches to vocabulary learning, it was hypothesized that the context of language study would play an important role in determining how learners went about their lexical acquisition. Also, the environment was hypothesized to be an important factor to consider when relating study habits to demonstrated vocabulary knowledge. A stronger relationship between structured vocabulary learning and high scores on the vocabulary test was expected in the case of students learning English as a foreign language.

Lacking opportunities to practice English in everyday situations outside class time, the EFL group was also expected to engage in a wider range of direct, overtly vocabulary-targeted learning activities in order to enhance their lexical skills. Conversely, since students in the ESL group were living and studying in an environment where English was available on a daily basis, it was expected that their approaches would reveal a fair amount of indirect lexical learning. Thus, the systematicity with which they approached vocabulary study was hypothesized to bear a less straightforward relationship to their language skills.

CHAPTER 3: RESEARCH DESIGN

3.1. PARTICIPANTS

3.1.1. The ESL Group

Participants in the ESL group were fifty-four undergraduate students at Concordia University, Montreal. They were all non-native speakers of English, identified as having approximately the same level of proficiency in English by the Concordia English Language Diagnostic Test (CELDT). According to university regulations, all non-native speaking students wishing to embark on undergraduate studies are required to take the CELDT as part of their admission process. Based on their scores, students are then recommended for placement in university-level credit ESL courses, technically known as ESL 207, 208 and 209, which can be taken either prior to or concurrently with other subject-matter courses.

For this study two intact classes at the 208 level were chosen. The reasons for opting for students at the middle-level were twofold. Firstly, the results of a pilot study (see Chapter 3, section 3.5.) indicated that both the Yes/No tests and the cloze test could be too difficult for students in ESL 207. Secondly, it was speculated that students at the lower level (ESL 207) may not yet have formed their language (including vocabulary) learning habits. The decision not to include students at the higher course level (ESL 209) was motivated by an effort to bring the ESL group as close as possible to the EFL group in terms of the students' proficiency level in English, as students at the 209 level were considered somewhat more proficient in English than

learners in the EFL group. This was only a hunch based on the researcher's observations; however, the test results confirmed that the middle ESL level was a fairly comparable match to the EFL group (see Chapter 4 for details).

At the time of the data collection, students were receiving two hours of English instruction twice a week. Explicit vocabulary teaching did not feature prominently in their course, the focus being primarily on the improvement of the students' writing skills.

There were fifty-four students available for surveying. However, as some of them were absent from either the questionnaire completion or the actual testing, the final sample consisted of forty-seven participants. Twenty-seven (57.5%) of them were male and twenty (42.5%) were female. Their age ranged from 19 to 43 years, the mean age being 24.5 years. The group was fairly heterogeneous with regard to the participants' mother tongue. The 47 students belonged to seventeen different linguistic backgrounds, the three largest groups being speakers of Arabic (8), speakers of Cantonese (7) and speakers of Chinese (7). Appendix E-1 (1) gives details of the distribution of students across language backgrounds.

As for their field of study, participants could be grouped into five major categories: Commerce and Administration, Engineering and Computer Science, Fine Arts, Humanities and Sciences. Appendix E-2 (1) contains a more detailed description of these categories, along with the distribution of students across them.

Fifteen students (32%) reported that they had started learning English as children (at the age of 10 or below); twenty-two of them (46.8%) began learning it in their adolescent years (age 10 to 18), whereas eight students (17%) first encountered the language as adults. The remaining two students did not specify the age at which their language learning experience had

begun. Twenty-three participants (49%) described themselves as bilingual, speaking their mother tongue and English, while twenty-four students (51%) declared that they spoke an additional language, most often French. Almost half of the students (46.8%) reported that they enjoyed learning new languages; nineteen of them (40.4%) were indifferent to the task, whereas six learners (12.8%) expressed negative attitudes toward language learning in general.

3.2. The EFL Group

The group of participants for whom English was a foreign language consisted of forty-three students enrolled in the final year of their pre-university schooling in the town of Sremski Karlovci, Northern Yugoslavia. The secondary school they were attending offered a variety of courses within the field of the social sciences including languages, linguistics, translation, history, anthropology, sociology and philosophy. In the 1996/97 academic year, the overwhelming majority of the students were in the process of preparing for their university entrance examination in one of the fields described in Appendix E-2.

Due to the rather significant differences that the variable of context brought into the profile, it was impossible to find a group of EFL learners that would be an exact replica of the ESL group. On some of the biographical variables such as the students' age and the age at which their English studies had begun, there were considerable differences between the two groups. On other variables the EFL group was, to a large extent, comparable to the ESL group, a case in point being students' attitudes towards language learning and their knowledge of other languages.

For most of the participants in the EFL group learning one or even several foreign languages was vital to their future education and career. This was underscored by the fact that students were required to take a large number of language and language-related courses in the course of their secondary education. All learners had been studying English for several years; however, their contact with the language was largely confined to their English classes. At the time of the data collection, students were receiving six hours of English instruction per week.

No quantitative data were available for us to determine exactly how much English the EFL group knew. Impressionistic surveying suggested that, generally speaking, they were in the domain of mid- to higher intermediate proficiency level. This made them slightly less proficient than the ESL group whose members could be characterized as being fairly advanced in their English knowledge.

As with the ESL group, two intact classes of EFL students were selected to participate in the study. Of the forty-eight students available for surveying, complete data were obtained for forty-three. Nineteen of the participants (44.2%) were male, and twenty-four (55.8%) were female. In terms of their age, they were a homogeneous group indeed: the range stretched from 18 to 21 years, the mean age being 18.65 years. Contrary to the ESL group, these students also formed a fairly homogeneous group with regard to their native language. Only four language groups were identified. One of them (Serbo-Croatian, the language of the country) was considerably overrepresented compared to the other three (Hungarian, Slovak and Romanian), all of which are minority languages in that part of Yugoslavia. The distribution of students across language backgrounds is given in Appendix E-1 (2).

Following the same classification scheme as with the ESL group, students in the EFL group fell into four categories with regard to their prospective field of study. Detailed description of this variable can be found in Appendix E-2 (2).

Strikingly uniform also was the age at which the EFL group started learning English. The vast majority of students (N= 33, 76.7%) reported that they had begun learning English as children, with only ten students having done so as adolescents (23.3%).

In light of the information on the field these students were in and the type of school they were attending, it is probably not surprising that 31 of them (72%) reported knowing a third language in addition to their mother tongue and English. Only 12 students (28%) were merely bilingual. These figures are underscored by learner attitudes towards learning new languages. Only 4 students (9.3%) expressed negative attitudes; 14 of them (32.6%) were indifferent to the experience, whereas 25 (58.1%) claimed that they enjoyed it.

Table 2 gives a brief summary of the main biographical data characterizing the two groups that participated in the study.

Table 2: Basic biographical characteristics of the ESL and EFL groups

	ESL (N=47)	EFL (N=43)
AGE	range: 18 to 43 years mean: 24.5 years	range: 18 to 21 years mean: 18.65 years
SEX	male: 27 (57.5%) female: 20 (42.5%)	male: 19 (44.2%) female: 24 (55.8%)
FIELD OF STUDY	Commerce & Adm...: 18 (38.3%) Eng. & Comp. Sci.: 12 (25.5%) Fine Arts: 4 (8.5%) Humanities: 7 (14.9%) Sciences: 6 (12.8%)	Commerce & Adm...: 12 (27.9%) Eng. & Comp. Sci.: 0 Fine Arts: 6 (13.9%) Humanities: 21 (48.9%) Sciences: 4 (9.3%)
L1	17 different linguistic backgrounds	4 different linguistic backgrounds
OTHER LANGUAGES	bilingual: 23 (49%) multilingual: 24 (51%)	bilingual: 31 (72%) multilingual: 12 (28%)
AGE OF STARTING TO LEARN ENGLISH	child: 15 (32%) adolescent: 22 (46.8%) adult: 8 (17%) unknown: 2 (4.2%)	child: 33 (76.7%) adolescent: 10 (23.3%) adult: 0 unknown: 0
ATTITUDE TOWARDS LANG. LEARNING	positive: 22 (46.8%) indifferent: 15 (40.4%) negative: 6 (12.8%)	positive: 25 (58.1%) indifferent: 14 (32.6%) negative: 4 (9.3%)

3.2. INSTRUMENTS

Three instruments were used in the study to collect the necessary data. They included a questionnaire for surveying students' approaches to vocabulary learning, a set of Yes/No tests assessing vocabulary knowledge, and a measure of general language proficiency in the form of a cloze test. They were identical for both groups, with some minor changes in the wording of some questions with regard to the learning environment (i.e. English as a second vs. English as a foreign language). The following sections describe the instruments in greater detail.

3.2.1. Questionnaire on Approaches to Vocabulary Learning

In order to survey what students were doing in the course of their vocabulary studies, a six-page questionnaire was distributed in the first phase of the data collection process (see Appendix B). The first part of the questionnaire pertained to background information. Respondents were asked a series of demographic questions about their age, sex, field of study, mother tongue, and other languages they spoke. They were also asked to indicate the age at which they had started learning English, as well as their attitudes toward learning new languages in general. Some of these biographical data have already been presented in the previous section. Further information concerning the background variables can be found in Appendixes E-1 and E-2.

3.2.1.1. Origin of the Questionnaire Items

The main body of the questionnaire consisted of two parts. The first part was based largely on Sanaoui's work (Sanaoui, 1992) and was designed to elicit information about learners'

approaches to vocabulary study. The questions pertained to behavioural traits which had previously been found to distinguish between learners who followed a structured and those who followed an unstructured approach. Although the questions (with the exception of 8-8b) had been taken from Sanaoui's questionnaire, the response format in which they were to be answered was changed. It was speculated that Sanaoui's open-ended format would have taken students a fair amount of time to complete and would have resulted in data which would be very difficult to code, group and analyze. Consequently, instead of blank lines, students were presented with either a Likert-type scale or a closed set of options in a multiple-choice format.

Questions 1-7d generated information on some of the criterion variables found by Sanaoui to discriminate between structured and unstructured learners. Questions 8-8b were added as yet another variable that was, in light of some other research findings (Ahmed, 1989; Hulstijn, et al., 1996), considered to have the power to distinguish between more organized and less organized learners. The detailed description of the criterion variables is the topic of the following section.

3.2.1.2. Main Criterion Variables

It will be recalled that the characteristics found by Sanaoui (1992) to differentiate between structured and unstructured learners included:

1. the amount of time learners spent on independent study;
2. the number of self-initiated learning activities they engaged in;
3. the extent to which they recorded vocabulary items;
4. the extent to which they reviewed those records; and
5. the opportunities for practice that learners created for themselves outside of class time.

These variables were retained in the present study, but they were included in the questionnaire in a somewhat modified fashion.

Questions 1 and 2 required learners to indicate on a Likert-type scale how much time they usually spent learning English on their own, apart from their course-related activities. While the first question concerned learning English in general, the second focused exclusively on vocabulary learning activities. These two items yielded information on the variable labelled TIME.

In questions 3, 4 and 5 respondents were asked about their main source of new English vocabulary, about their opportunities to practice recently learned words, as well as about their preference for vocabulary-targeted activities. Students had to indicate their position on a scale whose two endpoints referred to teacher-initiated activities in the English class, and self-initiated learning outside of class, respectively. These three questions generated information on the variable labelled LEARNER INDEPENDENCE.

In question 6, learners were presented with a list of 20 learning activities and asked to check off those in which they engaged in on a regular basis outside class time. Ten of the activities pertained to language learning in general. They included, among other things, listening to the radio, watching TV, going to the movies, reading, and initiating conversations with native speakers or fellow students. The other half of the list contained specifically vocabulary-targeted activities such as making up sentences with words to be learned, associating words to L1 or other English lexical items, writing down words, reviewing them and grouping them according to the semantic field they belonged to. The two types of activities were listed in an alternating order, and learners were reminded to check off only those that were typical of their learning approach. General language learning activities were to reveal the amount of indirect vocabulary

learning that students engaged in, whereas the activities geared explicitly at vocabulary were to yield information on the amount of direct vocabulary learning. The variable the question 6 provided data for was labelled VOCABULARY LEARNING ACTIVITIES.

The fourth criterion measure was VOCABULARY NOTES. Questions 7, 7a and 7b served as the source of data for this variable. In question 7, students were required to indicate on a scale the frequency with which they wrote down English words that they were learning. Item 7a asked respondents for the reasons behind keeping vocabulary notes, whereas item 7b yielded information on where students wrote down recently encountered words. Both questions followed a multiple-choice format, as the pilot testing indicated that allowing for open-ended responses did not generate any additional information.

In question 7c, participants were asked to specify how often they reviewed their vocabulary records. In item 7d, qualitative data were obtained concerning how they usually conducted their review activities. These two questions formed the fifth criterion measure labelled REVIEW.

The last variable that had been added to the five others taken from Sanaoui's work concerned DICTIONARY USE. Previous work on vocabulary learning (Ahmed, 1989; Hulstijn, et al., 1996) suggested that the frequency and elaborateness with which students use dictionaries might be related to their success in learning new words. Consequently, it seemed reasonable to include this variable as a separate criterion variable. In question 8, learners were asked to indicate on a scale how often they used a dictionary. Item 8a concerned the elaborateness with which students read the information available in a dictionary entry, whereas item 8b generated

data on the extent to which dictionary use was integrated into students' overall vocabulary learning endeavours.

In summary then, the six criterion variables which were expected to distinguish between various learner types in term of their approach to vocabulary study were:

1. time;
2. learner independence;
3. vocabulary learning activities;
4. vocabulary notes;
5. review; and
6. dictionary use.

3.2.1.3. Related Issues

It is often said in strategy research (Naiman, et al., 1978; Oxford, 1990) that the kind of approach learners adopt is very much intertwined with, among other things, the attitudes learners have towards language learning in general, and a specific sub-component of it, in particular. Hence the decision to include in the questionnaire a few items (questions 9 and 10) geared at assessing students' attitudes toward vocabulary learning.

Questions 11, 12 and 13 were included to capture 'learner orientation'. Anecdotal evidence suggests that meaning-oriented learners could be characterized as having a 'good ear' for 'picking up' new words. Since they care less about accuracy and are concerned more with conveying their message, such learners may be more willing to use recently heard words in their output, thus

aiding their lexical learning. Conversely, accuracy-oriented learners are generally more worried about getting every segment of their language production right. These efforts may prevent them from using lexical items they are unsure about and deprive them of useful opportunities to practice new words. Admittedly, this categorization is highly speculative in nature, and items 11, 12 and 13 were included into the questionnaire to see if the distinction held at all. In case 'learner orientation' proved a relevant variable, more detailed analyses were to explore its relationship to success in vocabulary learning.

Another issue which could be examined in relation to students' lexical knowledge is their ability to state their vocabulary learning goals and specify the strength and weakness of their vocabulary knowledge (items 14, 15 and 16). It was suggested by some (albeit not all) of Sanaoui's data that students who were able to specify and narrow down their vocabulary learning goals were more structured in their approach and more successful on the vocabulary tests. On the other hand, students who were very general and stated that they simply wanted to 'learn more words' were more likely to adopt an unstructured approach and were less successful in achieving their goals.

Question 17 probed the extent to which students relied on their mother tongue and/or other languages they knew when learning new English words.

In the last part of the questionnaire (items 18 through 21), respondents were asked to identify the strategies that they used most often to compensate for lack of lexical knowledge in situations involving the four basic language skills, i.e. while reading, listening, speaking and writing in English outside class time.

3.2.2. The Vocabulary Test

3.2.2.1. Assessing Lexical Competence

Although the question of vocabulary assessment has received considerably more attention than many other questions in the field, research in the area has not yet been able to produce a set of standard tools for measuring lexical competence (Meara, 1993). A variety of tests have been used to measure various aspects of vocabulary knowledge with various degrees of success, and they all have their strengths as well as weaknesses (Meara, 1994b). Although there still is no consensus among researchers as to what exactly constitutes lexical competence and what knowing a word really entails (for an oft-cited comprehensive review see Richards, 1976), vocabulary knowledge is generally evaluated along two dimensions. One involves the distinction between receptive and productive knowledge (i.e. the ability to recognize and understand words vs. the ability to actively use words). The other dichotomy distinguishes between measures assessing vocabulary size and those assessing the depth of vocabulary knowledge (i.e. the number of words a learner knows and how well words are known) (Palmberg, 1987; Read, 1988; Wesche & Paribakht, 1996).

Since the assessment of productive vocabulary often involves time-consuming measures which are difficult to score and which test only a small portion of the target vocabulary, tests of receptive vocabulary are far more numerous and are used more often for both placement and research purposes. Also, since scholars generally agree that receptive vocabulary is larger than productive vocabulary (Palmberg, 1987; Nation, 1990; Meara, 1990), it often seems only logical to

aim at assessing the largest set of words a person knows, especially if the focus is on vocabulary size, rather than depth of knowledge (Loring, 1995).

Some of the better-known methods for testing vocabulary size include various multiple-choice formats, the spew test, the c-test, tests involving matching words with definitions or translations, lexical decision tasks and error recognition tests (Read, 1988; Nation, 1990; Wesche & Paribakht, 1996). Although these methods have their advantages and are still in use, some of them have a number of drawbacks. Some tests are difficult to construct, others can be time-consuming to score; some permit only a limited sampling of the learners' total vocabulary, whereas others test for more than the stimulus word, encourage guessing, and thus tend to overestimate vocabulary size (Meara, 1994a; 1994b).

Measures tapping the depth of vocabulary knowledge essentially constitute a field in the making. The fact that they are less numerous and less frequently employed stems largely from the lack of consensus among researchers as to what knowing a word really means. The 'word associates' test developed by John Read (1993), and the vocabulary knowledge scale designed by Wesche and Paribakht (1996) are two of the more comprehensive measures assessing the depth of vocabulary knowledge. A thorough review of these instruments is clearly beyond the scope of this thesis. The reader is referred to the above-mentioned publications for more detail concerning their format, validity and reliability.

3.2.2.2. Choosing a Vocabulary Test

As the brief review in the previous section indicates, there are many vocabulary tests to choose from. A lot of them are 'home-made', i.e. designed to suit specific purposes in specific studies, others are halfway to becoming standardized. However, none of them is perfect. The choice of a vocabulary measure for this study has been made with two important points in mind: the inherent advantages of the test, and its suitability to the purposes of this research and the circumstances under which the study has been carried out.

Although probably the most widely-used vocabulary measure, multiple-choice test formats have at least three important disadvantages. Besides being difficult to construct and allowing for only a limited sampling of learners' total vocabulary, the multiple-choice format is unable to control for any guessing that test-takers may be doing. Spew tests are heavily affected by individual differences such as competitiveness, and, rather than yielding a straightforward measure of the test taker's productive vocabulary, they may be evaluating "writing speed, lateral thinking or associative looseness" (Palmberg, 1987:206). The responses are also very difficult to score. The validity of the c-test as a vocabulary measure has been questioned, as scores obtained on it are heavily influenced by the context in which the to-be-restored words are embedded. As Wesche and Paribakht (1996) point out, beside lexical competence, c-tests are also affected by the test taker's morphological and syntactic knowledge, as well as overall textual competence.

Measures assessing the depth of vocabulary knowledge have a range of weak points as well. The 'word associates' test (Read, 1993, 1995) has proven rather difficult to construct, as words that have essentially one meaning are sometimes difficult to find associates for.

Performance on the test is heavily influenced by willingness to guess on the test taker's part. As Read (1995) himself notices, "higher proficiency learners were sometimes able to identify two or three associates for an item, even when they did not know the target word" (p. 2). This finding calls into question the basic assumption underlying the test, namely that it measures the depth with which the target items are known.

The purpose of Wesche and Paribakht's (1996) 'vocabulary knowledge scale' is to "to track the early development of knowledge of specific words in an instructional or experimental situation" (p. 33), rather than to estimate general vocabulary knowledge. In its present form, the test is unable to evaluate knowledge of different meanings of polysemous words, or different aspects of word knowledge (such as derivations and collocations). Another criticism that has been levelled against the 'vocabulary knowledge scale', however, pertains to its being heavily influenced by the choice of words (Meara, personal communication).

A type of receptive vocabulary test, known as the Checklist or Yes/No test, has recently been proposed by Paul Meara and his colleagues (Meara & Buxton, 1987; Meara & Jones, 1988; Meara, 1993; Meara, 1994a) as a simple and effective alternative to the tests reviewed above. It has been chosen for this study because, besides being easy to administer and score and simple for subjects to take, it was proven an efficient measure of vocabulary size in several projects that investigated its validity in both L1 and L2 vocabulary research (Anderson & Freebody, 1983; Meara & Jones, 1988, Loring, 1995). The test format, and its principal advantages and disadvantages are described below.

3.2.2.3. What is a Yes/No Test?

The most attractive feature of this test format is the minimum effort it requires on both the test taker's and the administrator's part. Learners are presented with a list of words some of which are real words, while others are non-existent, invented lexical items. The learners' task is simply to indicate, usually by means of a check mark, which words they know. 'Knowing a word' is not strictly defined. However, the instructions to the test do caution learners against checking off items whose meaning they are not sure about.

Besides being easy to construct, administer and score, the Yes/No test has other distinct advantages. The invented words present a built-in control mechanism for guessing, and the simple format allows for a large number of words to be tested within a very short period of time. Research in the area of L1 vocabulary acquisition was the first to make use of the Yes/No test (Anderson & Freebody, 1983). Results indicate that this method has higher validity than the multiple choice tests used earlier: the scores students obtained on the Checklist were good indicators of the proportion of words they actually knew. As pointed out by Anderson & Freebody (1983), even false-alarm rates (i.e. the proportion of checked non-existent words) can provide interesting insights into the language processes involved in vocabulary acquisition.

Because Yes/No test results have tended to correlate well with scores obtained on multiple-choice tests, as well as tests of reading and listening comprehension, it may be possible to use the Checklist for diagnostic purposes, as well as for evaluating subjects in empirical research (Meara & Jones, 1988).

3.2.2.4. Choosing the Yes/No Test Level

All the Yes/No tests used in this study were taken from Meara's EFL Vocabulary Tests (1992). This collection contains a set of tests which are graded into six levels of difficulty, with twenty tests, each with 40 real words and 20 invented ones, at each level. Levels 1 and 2 cover the core vocabulary of English and represent a basic stage in lexical knowledge. Each level assumes knowledge of the words in the previous one(s). Level A, the final level, tests for knowledge of words commonly found in university settings (academic vocabulary).

As this study focused on the lexical needs and vocabulary knowledge of university ESL and pre-university EFL speakers, Level A of the six Yes/No test sets seemed the appropriate vocabulary band to survey students on.

3.2.2.5. The Origin of the Test Items

The Level A real words were taken from a university entrance level word list compiled by Paul Nation and his colleagues (Nation, 1986). This selection, known as The University Word List (UWL), is a compilation of university-gearred lexical items found in first-year university textbooks from as many as twenty-nine different disciplines. Thus, the UWL embodies a basic, common foundation in lexical knowledge for students in a variety of fields. This made the Level A tests of particular interest as a source of Yes/No test to be administered in this study.

The distractors (also called 'non-words' or 'invented words') used in the Level A Yes/No tests were taken from a list of orthographically possible words in English which was compiled from two sources (Loring, 1995). A subset of non-words was taken from names in British

telephone book listings (e.g. elphick, gurley, haque, keir), while the remainder were formed by combining stems and affixes from real Romance words. The result were phonological and morphological combinations which, albeit nonexistent, 'looked' very much like English words (e.g. museumist, intimant, faminisation).

3.2.2.6. Selecting the Checklists to Be Administered

As already mentioned, the Level A Yes/No tests were chosen for their emphasis on the type of general, non-technical academic vocabulary necessary for university studies. There are twenty test at the A level, each containing 40 real and 20 invented words. Since the tests are based on a word list of about 1000 words, the sampling rate, even if we take each test individually, is already higher than with other vocabulary tests ($1000/40=25$). This "allows us to estimate a testee's vocabulary knowledge with a fair degree of accuracy" (Meara, 1992:8). What makes this estimate even more reliable is having learners fill out several tests at the same level. As the Checklist is easy to administer and complete, it was decided that three tests at the A level were to be used for this study. This permitted a sampling rate of nearly one word in every 8 at level A ($1000/120=8.3$).

Selecting the three tests out of the existing 20 could not be left up to a random process as it was found that a considerable number of both real and invented items occurred more than once across the 20 tests. By choosing tests A01, A07 and A10, it was thought that all overlapping items were avoided. However, as it turned out, one such item did manage to remain unnoticed; the word 'fragile' appeared in both test A01 and test A10. The three tests, along with the instructions for their completion, can be found in Appendix C.

3.2.2.7. Scoring the Yes/No Test

As noted earlier, one of the important advantages of the Checklist over some other vocabulary tests is the fact that it has a built-in control mechanism in the form of non-words that is able to estimate how much guessing the testee is doing. Having both real and invented lexical items on the test, four types of response are possible:

Table 3: The four possible responses on the Yes/No test (adapted from Meara & Buxton, 1987:145)

	<i>real words</i>	<i>invented words</i>
<i>response YES</i>	HIT	FALSE ALARM
<i>response NO</i>	MISS	CORRECT REJECTION

A 'hit' response is obtained when the test taker correctly decides that the item is a real word. When he/she does not recognize a real item, the response is labelled 'miss'. When the test taker claims to know an item that is actually non-existent, a 'false alarm' arises, whereas if he/she makes no claims about an invented word, the response is called 'correct rejection'.

The test taker's final score on the Checklist is determined by taking the number of hits and the number of false alarms and applying a rather complicated signal detection mathematical formula (Meara & Buxton, 1987) which calculates the test taker's true hit rate. This 'real score' reveals the number of correct responses obtained once the false alarm rate has been taken into account. By charting all the possible hit and false alarm rates, Meara (1992) has come up with a grid which allows test administrators to take a shortcut and arrive at test results without bothering with the complex formula (see Figure 1).

Figure 1: Grid used to score the Yes/No test (from Meara, 1992)

	mistakes													
	0	1	2	3	4	5	6	7	8	9	10	11	12	13
40	100	95	90	85	80	75	70	65	60	55	50	45	40	35
39	98	92	87	82	76	71	66	60	55	49	44	38	32	26
38	95	90	84	78	73	67	61	56	50	44	37	30	24	17
37	93	87	81	75	69	63	57	51	44	38	31	23	16	8
36	90	84	78	72	65	59	52	46	37	32	24	16	8	
35	88	81	74	68	62	55	48	41	34	26	18	9		
34	85	78	72	66	59	52	43	37	28	20	11			
33	83	76	68	61	54	46	39	31	22	14	4			
32	80	73	65	58	50	42	34	26	17	7				
31	78	70	62	54	46	38	29	11	1					
C 30	75	67	59	51	42	33	24	15	5					
O 29	73	64	56	47	38	29	19	9						
R 28	70	61	52	43	34	24	14	3						
R 27	68	59	49	40	30	20	9							
E 26	65	56	46	36	26	15	4							
C 25	63	53	42	32	21	10								
T 24	60	50	39	28	17	5								
23	58	47	35	24	12									
Y 22	55	44	32	20	7									
E 21	53	41	28	16	3									
S 20	50	37	24	11										
19	48	34	21	6										
A 18	45	31	17	2										
N 17	43	28	13											
S 16	40	24	8											
W 15	38	21	4											
E 14	35	17												
R 13	33	13												
S 12	30	9												
11	28	6												
10	25	1												
09	23													
08	20													
07	18													
06	15													
05	13													
04	10													
03	8													
02	5													
01	3													

too many mistakes: do the test again but only say YES when you are really sure you know what a word means

at this level the tests aren't reliable: ask for an easier test

3.2.2.8. A Word on What the Checklist Measures

As noted earlier, research exploring the validity of this new vocabulary measure has suggested that scores obtained on the Checklist are fairly good indicators of the proportion of words test takers actually know (Anderson & Freebody, 1983). The research carried out by Meara & Jones (1988) also indicates that the test shows good test-retest reliability and also that scores obtained on it "correlate moderately well with a range of other language skills, notably Reading Comprehension and Listening Comprehension" (Meara, 1994b). Loring's (1995) study also speaks in favour of the Yes/No test being a good indicator of learners' vocabulary knowledge.

However, the Checklist is not without limitations. It has been criticized for testing merely passive vocabulary recognition and thus for being "inherently incapable of testing more sophisticated types of knowledge about words" (Meara, 1994b:20). If test-takers assume a particularly strict interpretation not to guess, they may reject words which they might understand in context. This results in the Yes/No test underestimating the learner's lexical knowledge. Conversely, even with the control-mechanism for guessing, the test can sometimes overestimate subjects' lexical knowledge, as scores are based entirely on how many words test-takers claim they know, without the possibility of verifying whether they can actually use the words correctly. However, as Meara (1994b) points out, there is nothing wrong with having a test that evaluates only the receptive part of one's vocabulary. Indeed, as a test of visual familiarity, the Checklist is tapping the very basics of lexical knowledge. As long as it is taken for what it really is, this point ceases to be a drawback.

Another problem arises when one takes a close look at the invented words. In order to act as distractors, they must be constructed so that they bear some (enough) resemblance to

the real words in the same set. At the same time, they must not be overly attractive. Research into the Yes/No test done so far has revealed that not all invented words "provoke" learners to the same extent. Whereas some are almost never checked off, others "fool" a sizeable number of test takers. Clearly, more work is needed in this area, as an uneven distribution of "attractive" non-words across tests and test levels may considerably alter the test takers' scores.

Related to the above-discussed problem is another one: the possibility of the invented words affecting speakers from different language backgrounds to various degrees. The work Meara and his colleagues have done so far suggests that "the tests do work slightly differently for testees with different L1s" (Meara, 1990:110). Speakers of French are a case in point. Compared to speakers from Germanic backgrounds, French speakers were found to produce Yes/No scores that showed considerably lower correlations with other placement measures (Meara & Jones, 1988). Another "problematic" group are speakers of Arabic. Al-Hazemi's research (1993, cited in Loring, 1995) revealed that this group was particularly influenced by attractive distractors. Also, a number of Arabic learners systematically misread the stimulus word (i.e. "kitchen" instead of "chicken"). Thus their "correct" answers were not indicative of their knowledge of the target words.

3.2.3. Assessing Overall Language Proficiency

3.2.3.1. Why a Cloze Test?

Besides the Checklist, which was intended to measure the participants' lexical knowledge, there was another test administered in this study: a cloze test geared at assessing their overall language proficiency. Since the data collection took place during the students' regular English classes, using a standardized English proficiency measure such as the TOEFL test would have been far too time-consuming. The search for an easily constructed and administered integrative proficiency measure led to the cloze test.

3.2.3.2. What is the Cloze Test?

The structure of a cloze test is fairly simple: a reading passage is selected from which a certain number of words is deleted for a customary total of fifty blanks. The students' task is to fill in the blanks. The deletion pattern can be twofold: in the case of the random cloze, also called fixed-ratio cloze (Abraham & Chapelle, 1992), every n th word, usually every 5th, 6th or 7th, is deleted. An alternative form of deletion is the rational cloze, where researchers have the flexibility to delete a specific type of word (for instance, only content words, only academic words, etc.). The text that words are deleted from can be episodic, that is forming a coherent narrative whole, or encyclopedic, that is, "composed of factual sentences not organized by temporality" (Fotos, 1991:319).

Besides being easy to handle for the students, the cloze test is also quick to score for the researcher. One of three possible scoring methods is selected for traditional cloze tests: exact

word scoring; acceptable word scoring; or clozentrphy, where the answer is compared to the native speaker's 'norm'. Alternatively, a variation in the cloze format may be used to further simplify the scoring: a multiple choice format, where a set of 3 or 4 answers is given with one being the correct response and the others distractors. Also, a single list of words is sometimes used, which, besides the words missing from the text, also contains distractors. The learners' task then is to choose the correct response.

3.2.3.3. What Does the Cloze Test Measure?

Although the cloze procedure is one of the most widely used testing methods (Abraham & Chapelle, 1992), and the literature covering it is fairly abundant, researchers are yet to agree on what exactly it is that the test measures. Some researchers contend that cloze tests measure pretty much the same thing as discrete-point tests, and are able to account for only the basic language skills. Others are of the opinion that cloze tests are able to capture high-level skills and global language proficiency (Fotos, 1991).

Brown (1983) and Fotos (1991) cite a fair number of studies whose results show that cloze test scores correlate well with results obtained on measures such as essay writing and dictation, indicating that "the cloze test measured elements of language ability not tapped by traditional discrete-point instruments" (Fotos, 1991:314). Although cloze procedures "do not produce perfect tests of overall language proficiency, they do hold potential for measuring aspects of students' written grammatical competence, consisting of knowledge of vocabulary, morphology, syntax and phonology/graphology, and textual competence, knowledge of the cohesive and rhetorical properties of text" (Chapelle & Abraham, 1990:121).

3.2.3.4. Choosing a Reading Passage

The reading passage used as the basis for the cloze test administered in this study was adapted from John F. Ross's article "What You Didn't Know about Risk" published originally in the Smithsonian, and then in an abridged version in the Readers' Digest. The selected passage contained 275 words. It was on risk analysis and compared the expert's and the public's opinion on risky substances and activities. As the participants in this study were students from a variety of disciplines, the topic of the passage had to be something relatively neutral and equally close to the interest of all of them. An intact passage was chosen over a string of sentences, as previous research provided evidence for students doing better on coherent texts, on which "they [could] access the entire passage for cues" (Fotos, 1991:318).

As noted by Fotos (1991), researchers often prefer rational deletion to a fixed-rate deletion because in the former "semantic relationships tend to be less distorted, and the nature of the deleted item can be controlled" (p. 315). This was especially important in this study, where the focus was on vocabulary acquisition and lexical knowledge.

Given the fact that we had only a 20-25 minute time-slot available for the administration of the cloze test, we opted for the deletion of only twenty items instead of the customary fifty. Most of the 20 words had something to do with academic studies and appeared on the University Word List (Nation, 1986). This fact also brought the cloze passage closer to the Yes/No tests used in this study, as the items appearing on the latter were also pooled from the UWL. Seven nouns, six verbs and seven adjectives were deleted. A pilot test confirmed that the 20 words formed a representative group with regard to item difficulty as well; 6 words could be considered 'easy' (meaning that almost all the students got them right), eight items were of medium

difficulty (correctly supplied by about half the students), and the remaining six words proved rather difficult and were correctly supplied by only the best students.

As for the scoring procedures used for the cloze test, opting for the exact word method seemed the easiest and most time-efficient way. However, to make the subjects' task somewhat more straightforward, we decided to supply the twenty words, along with ten distractors in the form of a list following the cloze passage. Since the correct responses 'were given', we did not have to worry about approximations and synonyms. The presence of the ten extra items, on the other hand, prevented students from applying a blind guessing strategy. The cloze test can be found in Appendix D.

3.3. PROCEDURES

The same data collection procedures were followed in the case of all four classes. All three instruments were administered during the participants' regular English classes. Arrangements for this were coordinated with the students' class teachers. As completing all three instruments in one sitting would have been too tiring for the students and too disruptive for their classes, it was decided that the data would be gathered on two separate occasions. The 'approaches to vocabulary learning' questionnaire, requiring about 25 minutes to complete, was administered first. During the next class, students were asked to do the two tests. While they needed only 5-8 minutes to go through the three Yes/No tests, the completion of the cloze passage took up about 20 minutes of class-time.

Prior to filling out the questionnaire, students were given a consent form to complete if they wished to participate in the study. This sheet (included in Appendix A) informed subjects about the aims of the study, the procedures and a possible de-briefing session. It was stressed that participation in the research was entirely voluntary, that complete confidentiality would be maintained, and that the information students gave would not have any impact whatsoever on their course grade. Written instructions accompanying all three instruments were repeated orally. When filling out the questionnaire, students were asked to give their opinion as honestly as they could, since their personal learning strategies were at the heart of the study.

3.3.1. Students' Reactions

All students present at the time of the data collection agreed to participate in the study. They also expressed a wish to be informed about the results in general, and their own scores in particular. Consequently, after the questionnaire data had been coded and the tests scored, de-briefing sessions were organized, again in collaboration with the class teachers.

Students in both the ESL and EFL groups expressed positive attitudes towards the questionnaire, saying that its completion did help them reflect on what they do (or do not do) in the course of their vocabulary studies. They were particularly intrigued by the Yes/No tests, and were eager to find out more about how they had been constructed and scored. Some of the participants claimed that they had really enjoyed reading the cloze passage, and were interested in obtaining a second copy to work on at their own leisure.

3.4. SCORING METHODS

3.4.1. The Questionnaire

Responses on the questionnaire were coded numerically as 0,1 or 2. A score of 0 signalled lack of a characteristic or absence of a strategy, whereas 2 indicated a feature that was present or a strategy that was used quite often. For instance, in item #3, one of the questions probing learner independence (see Appendix B), if a student indicated that his/her main source of new English words was the ESL/EFL classes and homework assignments (left third of the scale), the answer was coded as a 0. Conversely, if the student indicated that his/her main source of new English words was self-initiated learning activities outside class time (right third of the scale), the response was coded as a 2. Opting of the middle-of-the-road resulted in the answer being coded as a 1.

By the same token, 2, 1 and 0 were used to signal more vs. less organized, more vs. less elaborate efforts in the participants' vocabulary studies. A case in point is item 8b. If a student indicated that he or she made no special effort to memorize a word after having looked it up in a dictionary, the response was given the code 0. If he or she repeated it several times mentally or aloud, that effort was coded as a 1, and the elaborate strategy of entering the word and its meaning into a vocabulary notebook received the code 2.

Responses given to the last 4 questions pertaining to compensation strategies were also coded according to their elaborateness. For instance, if students usually ignored an unknown word while reading and listening, the response was coded as a 0. Conversely, if they indicated that they generally looked it up in a dictionary or asked the speaker for clarification, the code for their answer was 2. Strategies that fell in between those two extremes were coded as a 1.

3.4.2. The Yes/No Tests

The three Yes/No tests used in the study were scored in the following way:

1. The total number of words a student checked off were added up. Erased and crossed-out items were not counted.
2. Using a transparent sheet that showed only the distractors, the number of 'false alarms' was counted, then entered under "f" at the bottom of the page (see Appendix C).
3. To arrive at the "h" score (the total number of 'hits'), the number of 'false alarms' was subtracted from the total number of checked items.
4. By aligning the number of 'hits' with the number of 'false alarms' in the grid (see page 55) provided by Meara (1992), the student's final score was calculated. The possible range of final scores was from 0 to 100 indicating the percentage of words the student knew in a given frequency band - in this case academic vocabulary.
5. As the final step in this scoring process, the three individual test results were averaged to give the subject's final Yes/No test score.

3.4.3. The Cloze Test

Each correctly supplied word was awarded one point. As there were twenty blanks on this task (see Appendix D), possible scores ranged from 0 to 20. Correct responses were tallied and results were then converted into percentage scores. Thus, for instance, a score of 10 was registered as a score of 50 (meaning 50%), a score of 14 as a score of 70, and so on. This was done so that the two sets of scores (those obtained on the Yes/No test and those on the cloze test) could be compatible, which in turn permitted analyzing them for any interrelatedness.

3.5. PILOT STUDY

A pilot study was conducted prior to the actual data collection. Fourteen students learning ESL in an intensive program at Concordia's Continuing Education Language Institute (CELI) participated in this study.

Rather than investigating in detail student approaches to vocabulary study and their relationship to demonstrated lexical knowledge, the pilot test served the purpose of pinpointing any problematic item either in the approach questionnaire or in the tests themselves.

In light of the data obtained, a few questionnaire items were modified with regard to either their wording or their response format. The vocabulary tests and the cloze passage were not in need of any alteration.

While students did not have problems with filling out the questionnaire, the two tests, particularly the cloze passage, proved somewhat too difficult for them. This piece of information was valuable when it came to deciding which level of the credit ESL courses (207, 208 or 209) to choose for the real data gathering. As participants in the pilot study were just slightly less proficient than students in ESL 207, it seemed that by choosing the 207 level we might have run the risk of the tests being too difficult for these students as well. Thus, students in ESL 208 appeared to be at the optimal English proficiency level for the instruments to be valid and discriminating.

3.6. ANALYSES

3.6.1. Why Change the Classification Model?

It will be recalled that in Sanaoui's (1992) work, the original model for this study, students' approaches to vocabulary learning were grouped into two categories: structured and unstructured. The classification was done so that students' learning habits were contrasted on five variables, discussed in detail in Chapter 2, section 2.3.2.. Those learners who adopted all five features were classified as following a structured approach, whereas those adopting none of them were classified as following an unstructured approach. Learners who adopted only one, two, three or four of the five features, and thus did not fit into the two "preconceived categories", were eliminated from all subsequent analyses.

Our initial hunch that this arbitrary classification might leave a range of differences between learners unattended was confirmed by the results obtained in the pilot testing. Only a few out of the 14 learners could be classified as following the structured or unstructured approach; the majority fell in between the two extreme categories.

This was a clear indication that the way students were grouped according to their approach to vocabulary study needed to be changed. Several fairly recent studies investigating different aspects of learner characteristics have made use of cluster analysis (Gieve, 1984; Skehan, 1986; Ahmed, 1989). Their results indicated that this statistical procedure "might do more justice to the individuality of the language learner" (Skehan, 1986:82), and might, in turn, be more revealing when it came to the identification of different learner types and their relation to success in language learning.

It was thus decided that cluster analysis would be used in this study as a way of grouping learners in order to capture the similarities and differences between various sub-populations in a more effective manner.

3.6.2. What is Cluster Analysis?

The basic function of cluster analysis is to group subjects according to the similarity of their response profiles so that members of each cluster have more in common with each other than they do with members of other clusters. The input in cluster analysis consists of a data matrix in which a population of subjects is represented in the N rows and the set of variables in the n columns. Clustering is done on the basis of the subjects' pattern of scores or responses, also called profiles.

If every student in our group adopted an entirely different approach to vocabulary study, they would all form a cluster on their own and there would be as many clusters as students. On the other hand, if all students approached vocabulary in exactly the same way, there would be only one cluster emerging from the analysis. Reality, however, is usually somewhere between these two extremes, and students exhibit similarities on some criterion variables and differences on others. Based on an index of similarity, cluster analysis "measures the statistical 'distance' of individuals and clumps together 'similar' people" (Gieve, 1984:45).

As noted by Skehan (1986), cluster analysis has been around for a good number of years, but since it requires high-speed computers doing massive computation, it was only relatively recently that its application has started gaining ground in a variety of disciplines. Rather

than thinking of cluster analysis as a single, invariable grouping technique, one is better off thinking of it as comprising a variety of methods used for finding relatively homogeneous groups in a given dataset. These methods may differ according to what distance measure or index of similarity they employ and what criteria they use for combining cases into clusters. Of course, they also reflect the different purposes of researchers working in different areas.

The data in this study were analyzed using the CLUSTER program found in the Statistical Package for Social Sciences (SPSS^x). The Euclidian distance measure was used for clustering subjects. The average-linkage between-groups method was employed for combining cases into clusters.

CHAPTER 4: RESULTS AND DISCUSSION

4.1. PRELIMINARY CONSIDERATIONS

It will be recalled that no data were gathered from the two groups of students (ESL and EFL) with regard to their English proficiency prior to the study. The two groups were chosen based largely on observational data which had suggested that they might be at roughly the same proficiency level.

Before any analyses were carried out on the results pertaining to students' approaches to vocabulary study and their relationship to success, it was essential to conduct a 'post hoc' comparison of the two groups with regard to their performance on the two proficiency measures used in the study. This was to confirm or refute the researcher's initial hunch that the students learning English in the two different settings were comparable in terms of their vocabulary knowledge and their overall English abilities.

Mean scores obtained on the Yes/No test are presented in Table 4. With a somewhat higher mean and lower standard deviation, the ESL group performed slightly better on this task, and as an analysis of variance (ANOVA) indicated, the difference, albeit small, was nevertheless statistically significant at the .05 level. It seems then that the ESL group entered the study with a somewhat higher level of vocabulary knowledge. This should not come as a surprise though if we consider the fact that the Yes/No test essentially tested for knowledge of

Table 4: ANOVA results obtained on the Yes/No test

GROUP	N	M	SD
ESL	47	60.97	15.51
EFL	43	53.05	16.25

F (1,89) = 5.59
p < .05

academic vocabulary, and the ESL group, taking the rest of their academic courses in English, had a much better chance to encounter and acquire such lexical items.

Table 5 presents the means for the two groups on the cloze test. An analysis of variance indicated there was no significant difference between the two groups. Thus, the participants could be said to have entered the study with a similar overall proficiency level in English, a finding that essentially confirmed my initial 'hunch' and allowed me to compare the groups on other measures and variables.

Table 5: ANOVA results obtained on the cloze test

GROUP	N	M	SD
ESL	47	10.11	3.94
EFL	43	9.30	4.18

F (1,89) = 0.88
n.s.

4.2. VOCABULARY LEARNING STRATEGIES: ESL vs. EFL

Whether students' vocabulary learning strategies differed in any significant way with regard to the two learning environments was the first question asked in this study. In order to determine how much students availed themselves of each strategy, mean scores for strategy use for the total sample, as well as for the two sub-populations were calculated. The results of these analyses appear in Table 6. Also, separate analyses of variance were carried out with each strategy as a dependent variable to examine if the use of a particular strategy was significantly different in the two groups.

Table 6: Average strategy use for the two groups

Group	N	Time	Independence	Note-taking	Review	Dictionary use
ESL	47	0.68	1.18	1.04	0.63	1.17
EFL	43	0.80	0.99	1.03	0.93	1.09
overall	90	0.74	1.09	1.04	0.78	1.13

Note: Possible range of scores for strategy use was 0 to 2.

Overall, students seem to spend relatively little TIME on learning English outside the classroom. (It will be recalled that TIME is a measure combined of language learning in general and vocabulary studies in particular.) Although there is a difference between the two groups on this measure, an ANOVA indicates that it is not significant [$F(1,89) = .65, p = .41$].

On the variable of learner INDEPENDENCE which encompassed self-initiated efforts to encounter and practice new lexical items and preference of outside-classroom activities as sources of vocabulary learning it is the ESL group that scored higher. An ANOVA revealed that the difference between the groups was significant at the .01 level [$F(1,89) = 5.97$]. This difference is probably easy to explain in light of the opportunities ESL students have in their immediate environment to encounter, practice and acquire new English words often without having to put in a conscious effort or some extra amount of time.

It is interesting to see that the two groups use the strategy of NOTE-TAKING to almost the same extent. This measure included not only the amount of note-taking in general, but also the elaborateness of the efforts with which notes were taken. Compared to some of the other strategies, note-taking is used fairly frequently, and almost all the learners resort to it in one form or another. Some keep elaborate written records of the new words so that they can review them more easily, others take notes to aid memorization. All this goes to show that students in both environments are aware of the usefulness of this strategy and, albeit with varying degrees of frequency, try to use it in their vocabulary learning efforts.

Even if the two groups take notes with approximately the same frequency and the same elaborateness, students in the EFL group certainly REVIEW their vocabulary notes more often. The results of an ANOVA reveal a significant difference between the two groups on this variable [$F(1,89) = 5.32, p < .05$]. ESL students seem to underestimate the value of this strategy; of all the five strategies their score is the lowest on this variable. Despite this fact, students in the ESL group use a greater variety of techniques for reviewing their notes. Whereas

almost all the EFL students review by either reading and re-reading their notes or quizzing themselves about the words, the ESL learners also report that they post charts and diagrams in their apartments, engage in a cooperative reviewing activity with their friends and review new words by using them in their daily conversations.

Results obtained on the measure for DICTIONARY USE indicate that this is the strategy students resort to most often. There is no significant difference in the frequency and elaborateness with which learners in the two groups use their dictionaries [$F(1,89) = .66, p = .41$]. It is interesting to see that even ESL students who can, and most certainly do, avail themselves of other sources of information on new English words use this source with equal frequency and elaborateness as students who do not have much input coming from their environment.

In summary then, the answer to the first question this study has set out to investigate is a partial yes. Students in the two settings do exhibit some differences with regard to what strategies they use and to what extent. In the case of learner independence and the strategy of reviewing, the differences are also statistically significant. There are also some, albeit not significant, differences in the amount of time students in the two groups spend on learning English outside the classroom and on the use of dictionaries. In contrast, the groups are strikingly similar in their note-taking efforts.

4.3. DIRECT vs. INDIRECT VOCABULARY LEARNING

The second question this study set out to answer pertains to the use of direct, explicitly vocabulary-targeted activities as opposed to indirect, heavily contextualized vocabulary study. Direct activities included things like making inter- or intra-linguistic associations, grouping words according to the field they belong to and repeating words several times. Indirect activities referred to, among other things, initiating conversations with native speakers, going to English movies, and reading English books, magazines or newspapers.

Since students in the ESL group were living and studying in an environment where English was available on a daily basis, it was hypothesized that their approaches would reveal a fair amount of indirect lexical learning. On the other hand, lacking opportunities to practice English in everyday situations outside class time, the EFL group was expected to engage in a wider variety of direct, overtly vocabulary-targeted learning activities in order to enhance their lexical skills.

Results clearly confirm these hypotheses. As can be seen from Table 7, students in the ESL group engage in a lot more indirect than direct vocabulary learning activities (a total of 253 vs. a total of 90). Indeed, if we look at the profiles of individual students in the group, more than half of them (25) exhibit a clear preference for indirect over direct activities, whereas only 3 out of the 47 ESL learners preferred direct activities.

Overall, there is significantly more direct vocabulary learning going on in the EFL group, a finding that confirms the initial hypothesis. However, the distribution of the two kinds of activities is far more even in this group than in the ESL group (a total of 156 direct activities vs. a total of

115 indirect activities). Student profiles within the group fail to reveal such dramatic preference patterns as those found in the ESL group. Only about 20% of the EFL students indicated clear preference for direct vocabulary learning activities. For the rest of the group, the distinction was a lot less clearcut.

Table 7: Direct and indirect vocabulary learning activities in the two groups

Group	N	Direct vocabulary learning activities				Indirect vocabulary learning activities			
		total #	average # per person	SD	F	total #	average # per person	SD	F
ESL	47	90	1.91	1.63	24.19*	253	5.38	1.77	76.88*
EFL	43	156	3.63	1.66		115	2.67	1.01	
overall	90	246	2.73			368	4.08		

*p < .0000

A final comment on the amount and variety of vocabulary learning activities the two groups engage in. Not only do ESL students use quantitatively more activities (total of 343), they also seem to avail themselves of a greater variety of activities. Conversely, EFL students use fewer activities overall (total of 271), and also the choice of those activities seems to be

restricted. This is partially explainable by the constraints inherent to the learning environment which offers students very limited opportunities for contact with English outside the classroom.

Nevertheless, it should be pointed out that these results should be viewed with a certain degree of caution. As this was not an experimental study set up to investigate in a strict manner the exact effects the language learning environment has on students' use of strategies, some confounding variables may have been left unaccounted for. Differences in strategy use due to idiosyncrasies, personal preferences and instructional influences are just a few that come to mind most readily. Thus, these findings should be considered merely the results of a descriptive survey and not something that would necessarily be substantiated by the results of similar studies in different settings.

4.4. PATTERNS OF STRATEGY USE

4.4.1. The Clustering Process

As mentioned earlier, the data were analyzed using the CLUSTER program of the SPSS. The method employed for grouping subjects was based on the Euclidean distance between cases as an index of dissimilarity. The cosine method, using pattern-shapes as units of comparison was also tried out; however, the results it yielded were largely meaningless and uninterpretable.

Initially it had been my intention to cluster students according to their scores on the six learning strategies referred to throughout this work as the "main criterion variables" (see Chapter 3, section 3.2.1.2.). However, analyses conducted at the group level (ESL vs. EFL) revealed that there were some quite significant differences between the two groups in the use of different types of vocabulary learning activities (see this chapter, section 4.3.), and it was feared that, if included in the clustering process, this variable might 'outweigh' the other five measures. This could have resulted in students being "forced" into certain clusters and their vocabulary learning profiles being distorted. It was thus decided that VOCABULARY LEARNING ACTIVITIES was to be excluded from the clustering measures and used instead as a dependent variable to determine group preferences once the clusters had been established. The remaining five variables according to which students were grouped then included TIME, LEARNER INDEPENDENCE, NOTE-TAKING, REVIEW and DICTIONARY USE.

The two groups (ESL and EFL) were combined for the cluster analysis. The method used for forming clusters followed the agglomerative hierarchical clustering algorithm. The process starts off by considering all subjects as one-member clusters. At the second stage, two most similar individuals are combined into a cluster. At each next stage "either individual cases are added to clusters or already existing clusters are combined" (Norusis, 1985:169) until, at the last stage, all subjects belong to a single cluster, i.e. the original sample. Unfortunately, contrary to what some researchers would like to believe (Ahmed, 1989), the cluster analysis program is not able to determine on its own when the clustering process has arrived at the optimal number of clusters. There is no straightforward procedure or mathematical criterion by which unequivocal decisions could be made as to when to stop 'clustering'. As Skehan (1986) points out, "the decision about the number of clusters is at the discretion of the experimenter ... and some subjectivity is bound to be involved" (p. 84).

There is, however, a "crutch" the researcher can lean on when making this fairly important decision: a figure which indicates the increase in the error sum of squares that are the results of merging two 'old' clusters into a 'new' one. "Large increases in this figure indicate that the data is being "forced", in a sense, with two relatively distinct clusters being merged simply because they are the closest clusters remaining in the analysis" (Skehan, 1986:84).

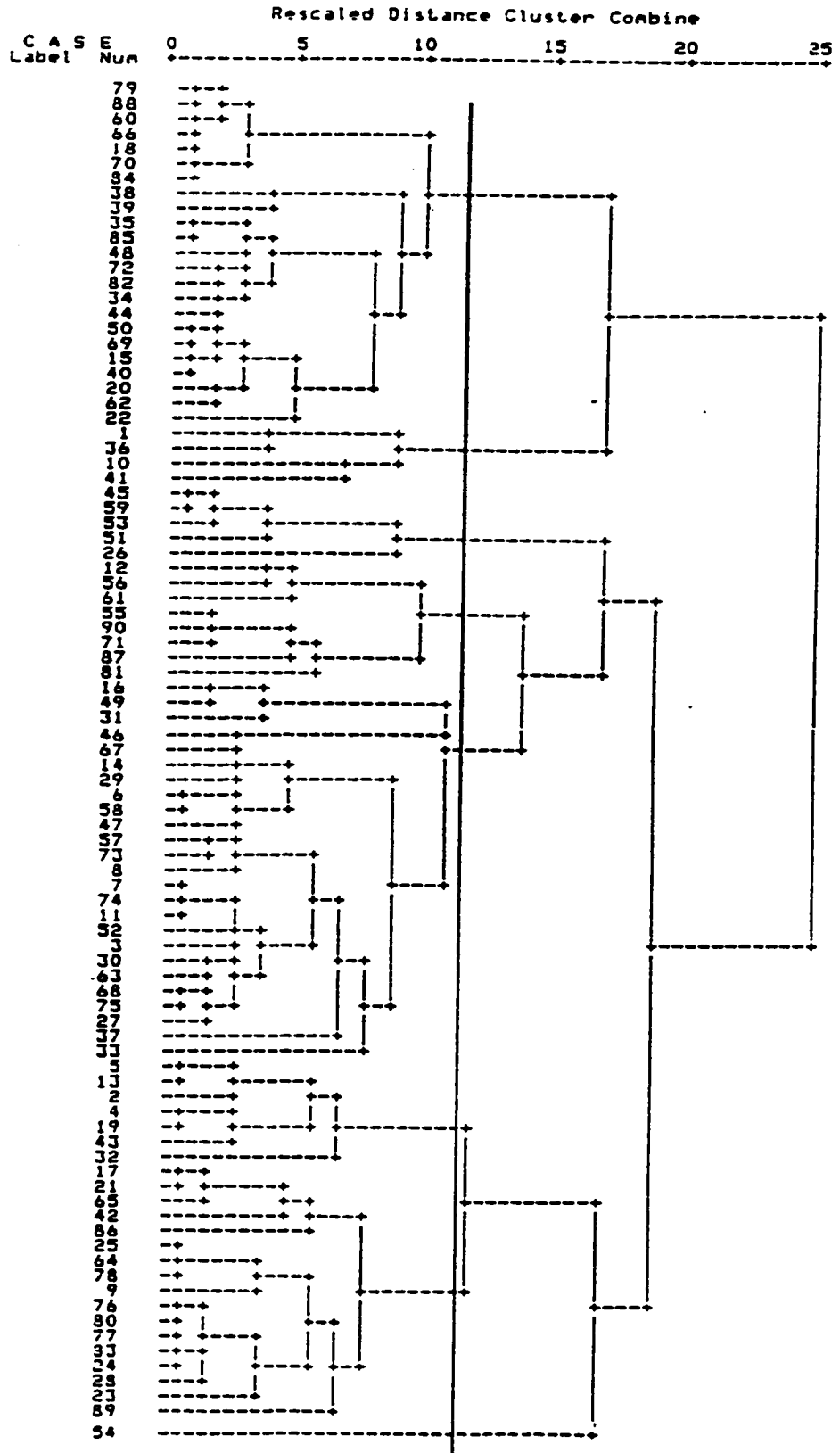
The increases in the error sum of squares computed at the last nine agglomerative steps in this cluster analysis are presented in Table 8. The place where the most significant discontinuity occurs is between the solutions with 8 and 7 clusters (bottom to top in the table). Moving from eight to seven clusters seems to force the data, as indicated by an unusually great increase in the error sum of squares.

Table 8: Increase in the error sum of squares at the first 9 agglomerative steps

Number of clusters	Increase in error sum
2	4.4629
3	3.2318
4	3.0009
5	2.9429
6	2.8762
7	2.4719
8	2.0114
9	1.9480
10	1.8138

Another source of evidence highlighting the appropriateness of an eight-cluster solution is the dendrogram of the clustering process, given in Figure 2. The dendrogram shows how a "cluster" of one was gradually built up from the original sample of 90 students. From Figure 2, it appears that the eight-cluster solution is indeed valid since it occurs before the distances at which clusters are combined become too large, reflecting greater heterogeneity within the clusters. Thus, it has been decided to focus on eight clusters, a number that seems an appropriate compromise between a larger number of small clusters, resulting in difficult and over-detailed interpretation, and a small number of large clusters which might present a rather crude analysis and leave some important distinction unattended.

Figure 2: Dendrogram using average-linkage clustering



4.4.2. Cluster Profiles According to Strategy Use

The next step in the analysis is to assign some kind of an interpretation to the eight clusters. The clustering program is able to group students only on mathematical grounds; it is not capable of assigning the grouping psychological relevance or reality. It is the researcher's task to attempt to determine the profile for each cluster, a more or less distinct and interpretable characterization in terms of the central concept of the study, in this case, profiles of approaches to vocabulary learning.

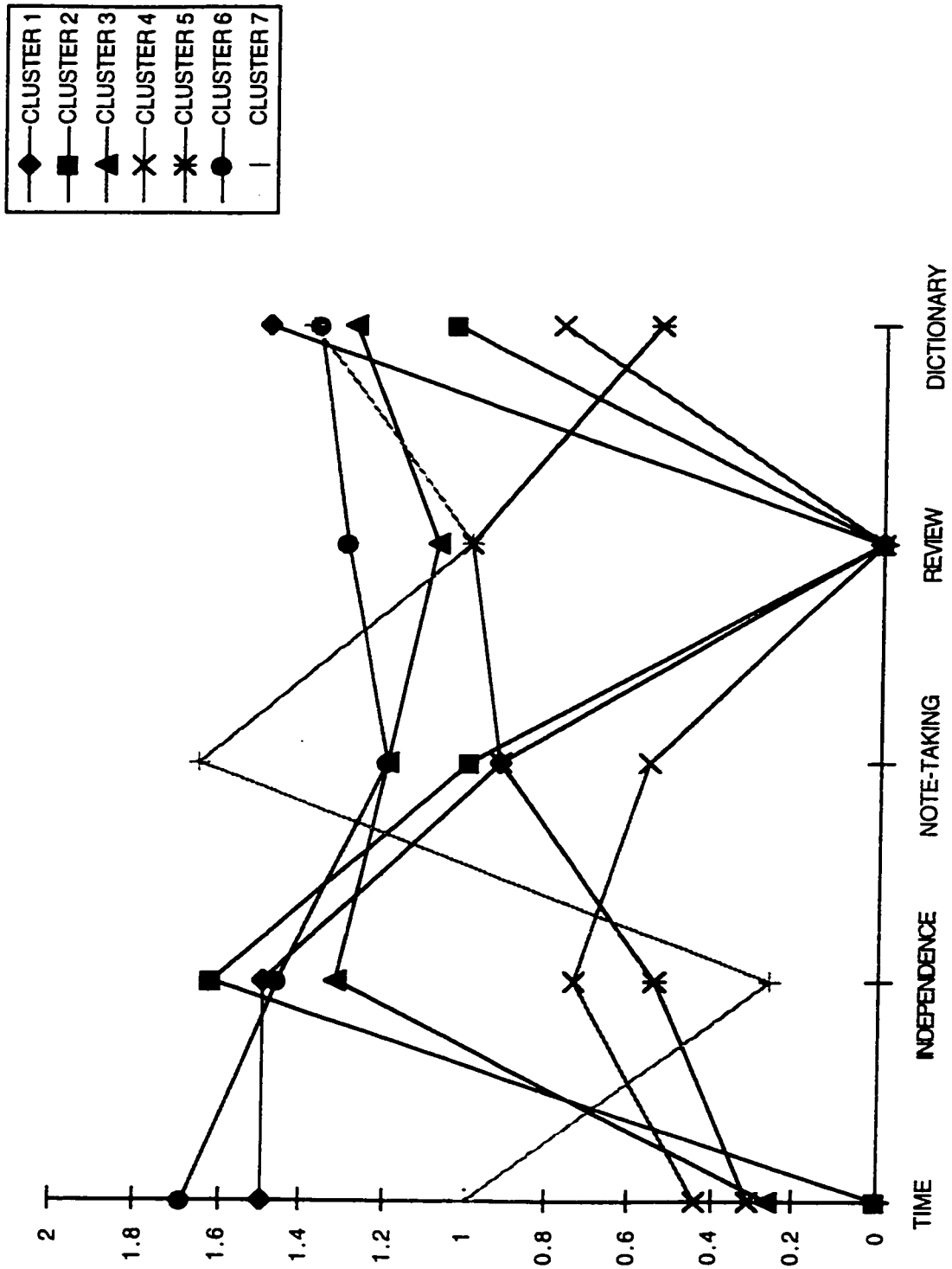
The mean scores for the use of the five 'clustering' variables are shown in Table 9, whereas the graphical representation of the cluster profiles is given in Figure 3.

Table 9: Means of strategy use for the eight clusters

Cluster	N	Time	Independence	Note-taking	Review	Dictionary use
1	4	1.50	1.50	0.92	0.00	1.50
2	7	0.00	1.61	1.00	0.00	1.04
3	25	0.26	1.32	1.20	1.08	1.29
4	17	0.44	0.74	0.56	0.00	0.78
5	8	0.31	0.54	0.92	1.00	0.54
6	23	1.69	1.46	1.20	1.30	1.37
7	5	1.00	0.26	1.66	1.00	1.39
8	1	0.00	0.00	0.00	0.00	0.00
overall	90	0.73	1.13	1.04	0.77	1.13

Note: Possible range of scores for strategy use was 0 to 2.

Figure 3: Cluster profiles on the five criterion variables



Note: Since the cluster-eight student did not use any of the strategies, his profile would have been a flat line equivalent to the horizontal axis of the diagram. This was a good enough reason to exclude this tiny cluster from the graphic profile representation.

Since the clustering method was based on a dissimilarity index, it is not surprising that the clusters would exhibit significant differences in the use of the five strategies. Results of relevant analyses of variance are included in Appendix F.

When cluster profiles are examined, a number of things become apparent with regard to the characteristics of students in each group. Based on the profiles shown in Figure 3, the following thumbnail sketches can be provided for each cluster.

Table 10: Thumbnail sketches of vocabulary learning profiles of the eight clusters

Cluster 1	high scores on TIME, INDEPENDENCE and DICTIONARY USE; low scores on REVIEW;
Cluster 2	high scores on INDEPENDENCE; low scores on TIME and REVIEW;
Cluster 3	high scores on INDEPENDENCE and REVIEW; low scores on TIME;
Cluster 4	very little strategy use overall; low scores on REVIEW; average or below-average scores on all other measures;
Cluster 5	very little strategy use overall; high scores on REVIEW; low scores on TIME, INDEPENDENCE and DICTIONARY USE;
Cluster 6	a clearcut profile of students with high scores on ALL FIVE STRATEGIES;
Cluster 7	high scores on TIME, NOTE-TAKING; REVIEW and DICTIONARY USE; low scores on INDEPENDENCE;
Cluster 8	a clearcut profile of one student who does not make use of any of the five strategies;

Basically, two types of clusters emerge from these sketches. On the one hand, there are 'pure', straightforward clusters, such as Cluster 6, comprising students with a clearcut profile of above-average scores on all five variables. On the other hand, clusters 1, 2, 3, 5 and 7 are 'mixed' in their strategy preferences; they clearly "overuse" some strategies and "underuse" others. Finally, there is Cluster 4, which does not seem to fit into either the 'pure' or the 'mixed' category. Students in this group have strategies that they do not use at all, but none on which they would obtain above-average, or even average scores.

In terms of the actual vocabulary learning profiles, analyses indicate that there is quite a large variety among the clusters in the way they approach lexical learning. Cluster 1 and Cluster 5, for instance, seem to be almost mirror images of each other. Whereas students in the former spend a lot of time on language learning, engage in a wide variety of activities outside the classroom and use their dictionaries frequently and in an elaborate manner, learners in Cluster 5 exhibit a below-average use of all these strategies. On the other hand, while students in Cluster 1 do not at all avail themselves of the strategy of review, for learners in Cluster 5 this is the only measure on which they score above the average.

Clusters 2 and 3 are similar as well as different at the same time. Students in both clusters have a drive for self-initiative and independence in their language learning endeavours, but neither group spends much time on learning English outside their classes. The main difference between the two clusters is in the use of the strategy of review. While Cluster 3 students score well above the average on this strategy, learners in Cluster 2 make no use of it at all.

Overall, students in Cluster 6 exhibit the largest amount of strategic behaviour, followed by learners in Clusters 1, 7 and 3. There is some strategy use in Cluster 2; whereas Clusters 4 and 5 show the smallest amount of strategy use overall.

Further discussion on cluster characteristics with regard to background variables and strategy use is to follow after results pertaining to the last two research questions have been presented and interpreted.

4.5. STRATEGY USE RELATED TO SUCCESS IN LANGUAGE LEARNING

4.5.1. Vocabulary Knowledge

One of the questions this study set out to investigate concerns itself with the relationship between the approach/typical strategic behaviour that students adopt and their performance on the Yes/No vocabulary test. As a first step in exploring this relationship, mean scores on the Yes/No test have been calculated for the eight clusters found in the population. Relevant results are presented in Table 11.

Table 11: Yes/No test results for the eight clusters

	N	M	SD
Cluster 1	4	73.95	12.47
Cluster 2	7	58.60	12.53
Cluster 3	25	57.29	13.42
Cluster 4	17	45.14	12.56
Cluster 5	8	38.03	7.61
Cluster 6	23	70.44	9.53
Cluster 7	5	57.30	20.04
Cluster 8	1	30.40	
overall	90	57.19	16.27

Note: The possible range for Yes/No test scores was from 0 to 100.

As shown in Table 11, the mean scores for the eight clusters range from 30.40 to 73.95. However, having only one member, Cluster 8 cannot be of much significance in illuminating the

relationship between strategy use and language learning success. Consequently, it will be considered only marginally in the discussion sections that follow.

The results of an analysis of variance revealed that the difference between the clusters in their demonstrated vocabulary knowledge was quite significant (Table 12).

Table 12: ANOVA results for Yes/No test scores for the eight clusters

Source	DF	SS	MS	F
Cluster	7	11295.42	1613.63	10.78*
Error	82	12275.73	149.70	
Total	89	23571.15		

*p < .000

Tukey post-hoc comparisons showed that, with an alpha level of .05, significant differences held between Cluster 1 and Clusters 4, 5 and 8; between Cluster 6 and Clusters 3, 4, 5 and 8; as well as between Cluster 3 and Clusters 4 and 5; and between Clusters 2 and 5.

Clusters 1 and 6 comprise students whose vocabulary knowledge is well above the group average. Standard deviation values also reveal that Cluster 6 is one of the most compact groups. A clear contrast to these two clusters is Cluster 5, a rather homogeneous group of students with significantly lower vocabulary knowledge. Cluster 4 learners also exhibit fairly poor lexical abilities, whereas the remaining three Clusters, 2, 3 and 7, are strikingly similar in their average scores on this measure. Perhaps one thing that differentiates Cluster 7 from the other two middle-of-the-road groups is its unusually high standard deviation. It seem to suggest that,

although the cluster's mean score is average, there may be a certain degree of heterogeneity among these students' performance on the Yes/No vocabulary test. This is probably why there are no statistically significant differences between Cluster 7 and any other cluster on the Yes/No test.

4.5.2. Overall English Proficiency

Another interesting way to explore the strategy use - success relationship is to look at how the approach/typical strategic behaviour that students adopt relates to their overall English proficiency as measured by the cloze test. Again, mean scores have been calculated for the eight clusters, and they are given in Table 13.

Table 13: Cloze test results for the eight clusters

	N	M	SD
Cluster 1	4	13.75	3.77
Cluster 2	7	8.14	2.85
Cluster 3	25	9.48	3.65
Cluster 4	17	7.05	2.68
Cluster 5	8	6.00	1.69
Cluster 6	23	13.22	3.24
Cluster 7	5	10.00	3.67
Cluster 8	1	4.00	
overall	90	9.72	4.05

Note: The possible range for cloze test scores was from 0 to 20.

Table 14 presents the results of an ANOVA which indicate that, as with the Yes/No vocabulary test, the difference between the clusters in their overall English proficiency is significant at the .000 level.

Table 14: ANOVA results for cloze test scores for the eight clusters

Source	DF	SS	MS	F
Cluster	7	629.35	89.91	8.85*
Error	82	832.70	10.15	
Total	89	1462.05		

*p < .000

Tukey post-hoc comparisons show that, with an alpha level of .05, significant differences hold between Cluster 1 and Clusters 4, and 5; as well as between Cluster 6 and Clusters 2, 3, 4, and 5.

The pattern of scores for the eight clusters on the cloze test is strikingly similar to that found for Yes/No test scores. Clusters 1 and 6 again emerge as the two strongest groups, whereas Cluster 5 students exhibit the poorest performance not only in their lexical knowledge, but also in their overall English abilities. Just as on the Yes/No test, Cluster 4 demonstrates a fairly poor performance on the cloze test as well. Students in Clusters 2, 3 and 7 are, once again, characterized by quite a uniformity in their average overall language proficiency.

The similarity in the scores generated by the two measures is underscored by a high correlation between the Yes/No test and the cloze test ($r = .86, p < .000$). Of the seven clusters that have enough members to be interpretable, two clearly comprise students with high achievement level, while two other clusters bring together learners with significantly lower scores on the two measures. Learners in the remaining three clusters are characterized by average lexical and overall English knowledge.

It remains to be seen how the typical strategic behaviour of students in the eight clusters relates to their success in language learning.

4.5.3. Strategy Use and Achievement Level

As mentioned earlier, clusters can exhibit either a 'pure' or a 'mixed' profile with regard to strategy use. The discussion will first concentrate on the former cluster type, groups that have a 'flat' profile, and consider the more saw-toothed profiles later.

Although Cluster 8 has only one member, it is worth looking at for its 'flat' profile of zero strategy use. The relationship between strategy use (or non-use, in this case) and performance on the two tasks is fairly straightforward: no effort on the students' part to engage in activities that could enhance lexical learning seems to be linked to poor vocabulary knowledge and low achievement level in English overall.

Cluster 6 provides a sharp contrast to Cluster 8; the twenty-three students in this group use all five strategies extensively. The elaborateness of their vocabulary learning endeavours is related to strong performance on the Yes/No test and an equally high level of attainment on the cloze test.

Of the more saw-toothed profiles, Cluster 1 is perhaps the most interesting to look at in detail. It offers an intriguing contrast to Cluster 6, the group of strategy-using high achievers. Cluster 1 also contains high achievers, but its strategy profile exhibits a prominent difference from that of Cluster 6 on the variable of REVIEW. Cluster 1 students do not make any use of this strategy, and yet they perform as well as, or even slightly better than, students in Cluster 6. A possible explanation for this may lie in the fact that Cluster 1 is made up of ESL students entirely, whereas in Cluster 6 there is a larger number of EFL students. (For further details on cluster characteristics with regard to background variables see Appendix G.) It may be speculated that for learners who are exposed to the target language on a daily basis, the strategy of REVIEW is not as crucial. The environment may furnish them with opportunities to 'review' recently encountered words in a more indirect and effortless way. EFL learners, on the other hand, are deprived of much opportunity to do 'spontaneous' reviewing and, it seems, are better off if they set out to compensate for that with direct and deliberate review activities.

However, that the use of reviewing activities alone is nowhere near enough to promote lexical learning can be seen from the profile of Cluster 5. These students exhibit very little strategy use overall, and have low scores on all measures but REVIEW. Their achievement level, in terms of both lexical and overall proficiency, is the lowest in the population. Similarly, Cluster 4 has very little strategy use going on as well. Average or below-average scores on TIME,

INDEPENDENCE and DICTIONARY USE are accompanied by the score of zero on the REVIEW measure. The overall performance of Cluster 4 on the two tasks is well below average. All this goes some way to suggest that the non-use of the strategies of TIME, INDEPENDENCE and DICTIONARY USE, with or without the use of REVIEW, is linked with fairly poor achievement level overall.

Clusters 2, 3 and 7 have the most saw-toothed profiles. These are the clusters whose average proficiency is also most difficult to account for. Cluster 2 students, who are all learning English as a second language, score high on INDEPENDENCE and this strategy seems to ensure their average performance, notwithstanding their low scores on TIME and REVIEW. Cluster 3, on the other hand, reports both a varied repertoire of self-initiated activities and an extensive use of reviewing to achieve an average proficiency level.

Perhaps the most mysterious is the case of Cluster 7 students, who are able to perform only at the average level despite the fact that they make extensive use of four out of the five strategy types. The only strategy these students do not avail themselves of is learner INDEPENDENCE. Could it be that this is one of the crucial strategies without which learners' chances of achieving high levels of success are considerably diminished?

It certainly is obvious that the findings of this study suggest a strong and fairly straightforward relationship between the amount of strategy use and high levels of success in language learning. However, if we look at the use of particular strategies by more or less successful clusters (see Table 10), another interesting trend emerges. It seems that learner INDEPENDENCE is indeed one of the crucial strategies; along with TIME, it is associated with the

vocabulary learning profiles of the two most successful groups (Clusters 1 and 6). Clusters that make use of neither of these two strategies exhibit the lowest proficiency level (Clusters 4, 5 and 8), whereas clusters that use either TIME or learner INDEPENDENCE attain average scores on the two measures (Clusters 2, 3 and 7).

These findings are corroborated by another set of results obtained by correlating scores on strategy use and scores on the two tests. As can be seen in Table 15, all the correlations are positive and significant. The variables of TIME and learner INDEPENDENCE show the strongest correlations with the two sets of test scores.

Table 15: Correlations between scores on strategy use and scores on the two tests

	Time	Independence	Note-taking	Review	Dictionary use
Yes/No test	.52**	.61**	.27*	.36**	.47**
Cloze test	.56**	.54**	.32*	.43**	.40**

*p < .01

**p < .001

In summary then, considering the fact that the 8 clusters had been formed according to their scores on the five strategy variables, it is truly extraordinary that they should exhibit such clear differences on their Yes/No and cloze test performance. This goes some way to suggest that there really is a fairly strong relationship between strategy use and learning outcomes, and also that cluster analysis is an adequate tool for revealing such a relationship.

The findings of this study are in agreement with those of Sanaoui (1992) with regard to the relationship between frequent and elaborate strategy use and higher levels of achievement. However, they also seem to go one step further by suggesting that a possible combination of strategies may work better than individual ones or a whole random group of them. Interestingly, spending time on vocabulary and actively seeking opportunities to use the target language (including its lexical aspect) outside and beyond the classroom are equally associated with better learning outcomes for both groups of students (ESL and EFL). This provides a clear contrast to the inverse relationship between strategy use and success in language learning that Lessard-Clouston (1996) found for his small group of ESL learners.

Also, the results reported here are very much in line with the findings of a recent study by Gu and Johnson (1996) who contend that "learners' vocabulary sizes [as well as their overall language proficiency] seem very much related to the learners' self-initiation in learning, their skillful use of a dictionary, [and] their willingness to spend extracurricular time to practice newly learned items..." (p. 659). (Unfortunately, a thorough review of Gu and Johnson's study cannot be taken up here since it has not influenced my work in any way. It was carried out simultaneously with my study and I came to know about its existence only after my research had been completed.)

4.5.4. Vocabulary Learning Activities and Achievement Level

As much as they vary in their use of strategies, the different clusters also show a fair amount of heterogeneity in their preference for different types of vocabulary learning activities. The means for direct and indirect lexical learning efforts are given in Table 16. Results of

analyses of variance indicate that there is a significant difference among clusters in the use of both direct [$F(7,89)=2.62, p < .01$] and indirect vocabulary learning activities [$F(7,89)=2.28, p < .05$].

Table 16: Direct and indirect vocabulary learning for the eight clusters

Cluster	N	Direct vocabulary learning activities		Indirect vocabulary learning activities		overall
		M	SD	M	SD	
1	4	1.50	0.57	5.75	1.25	7.25
2	7	1.57	0.78	6.00	1.15	7.57
3	25	1.25	2.07	4.24	2.02	5.49
4	17	2.00	1.45	3.58	1.47	5.58
5	8	2.50	1.18	2.75	1.03	5.25
6	23	4.75	1.76	4.00	2.04	8.75
7	5	3.60	2.70	3.80	2.38	7.40
8	1	1.00		3.00		4.00
overall	90	2.73	1.85	4.08	1.99	6.81

Note: Possible scores for both types of learning activity range from 0 to 10.

If we look at within-cluster variance, it becomes apparent that Cluster 1, 2, 3 and 4 exhibit a clear preference for indirect vocabulary learning, whereas Clusters 5, 6, and 7 have a more balanced repertoire of activities. What may easily explain these results is the fact that the first four clusters contain a large number of ESL students, with Clusters 1 and 2 comprising only ESL students (see Appendix G). These learners have already been found to show a clear preference for indirect over direct vocabulary learning (see this chapter, section 4.3.).

Clusters 5, 6 and 7, on the other hand, have more EFL students for members who, besides learning new words indirectly, also engage in a larger number and wider variety of direct vocabulary activities.

In terms of a possible relationship between type of activity and achievement level, the results allow for very little straightforward interpretation. No clear conclusions can be drawn concerning the overall use of learning activities and achievement level either. Cluster 6, the group that comprises high-achievers, has the largest overall number of activities. On the other hand, Cluster 1, the other strong group, does not make more extensive overall use of vocabulary activities than Clusters 2 and 7 whose members are characterized by average achievement level. The activity profile of the third average group, Cluster 3, resembles that of the low proficiency Clusters (4 and 5) in as much as they use the smallest number of vocabulary learning activities overall.

4.5.5. Background Variables

Apart from group membership (ESL vs. EFL), which has been discussed in previous sections, background variables reveal no clear patterns for the eight clusters, either for the typical strategic behaviour that students adopt or for their performance on the two tests. No discussion will thus be based on these data. The interested reader is referred to Appendix G which includes a table with cluster characteristics with regard to these variables.

4.5.6. Related Issues

It will be recalled that besides the background variables and the main question of strategy use, the questionnaire used for data collection also included items pertaining to three "related" variables, students' attitudes toward vocabulary learning, their vocabulary learning goals and 'learner orientation' (see Chapter 3, section 3.2.1.3.). It was hoped that some of these features might prove to be significantly different for the clusters found in the population.

Analyses have, however, revealed no significant difference among the clusters on the variable of attitudes and learning goals. Overall, students exhibit very favourable attitudes toward lexical learning and attribute high importance to vocabulary knowledge. These attitudes do not always go hand in hand with large amounts of strategy use, nor are they in any way related to successful performance on the two measures used in the study.

There is some, albeit not statistically significant, difference among the clusters with regard to students' ability to specify their vocabulary learning goals (Appendix H, Table H1). However, there seems to be no link between ability to state goals and achievement level. High achievers are able to state their goals (Clusters 1 and 6), but then so are Cluster 2 and 5 students whose test performance is average and below-average, respectively.

Although it does bring out a significant difference among the eight clusters [$F(7,89) = 3.83, p < .001$], the variable of 'learner orientation' (i.e. whether students are more accuracy or more meaning oriented) is not much easier to interpret (Appendix H, Table H2). It seems that, at least for students in this study, 'learner-orientation' does not appear to bear any relationship to either the amount of overall strategy use or the kinds of strategy learners adopt.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

5.1. CONCLUSION

The results of this study suggest that students learning English as a second language and those learning it as a foreign language show both similarities and differences in the way they approach the task of vocabulary learning. Given the difference in the learning environment, some strategies seem to 'come more naturally' to ESL students. Their everyday life abounds in contacts with the language which allow for more indirect, context-embedded lexical learning to take place. Also, by being exposed to English outside the classroom, ESL students are in a better position to initiate independent learning activities geared to vocabulary acquisition. EFL students, on the hand, may need to go somewhat 'out of their way' to create for themselves opportunities to encounter and practice new English words. They do so by engaging in a greater variety of direct, specifically vocabulary-targeted activities and by taking notes and reviewing them more frequently. The learning environment notwithstanding, frequent and elaborate dictionary use seems to provide a solid base for lexical learning.

To a certain extent, the results of the cluster analysis appear to corroborate Sanaoui's findings: extensive strategy use is linked to success in language learning, whereas lack of effort on the learners' part relates to poor achievement. However, unlike Sanaoui's 'black and white'

categorization, our cluster analysis is able to bring out differences among the stereotypical 'good', 'average' and 'poor' learner types. For instance, even without doing review activities students in one of our clusters demonstrate high overall proficiency and strong vocabulary knowledge. These findings suggest that success in language learning may be achieved in different ways.

Also, learner initiative and independence, along with the amount of extracurricular time spent on language (and vocabulary) learning, are seen as important factors relating to higher levels of achievement. All this goes some way to suggest that, learner individuality notwithstanding, some elements in the acquisition process are equally crucial in both language learning environments. The importance of time is probably less interesting in itself, since it has always been emphasized in SLA situations that mastering another language takes time. However, time alone does not seem to suffice. It also takes initiative on the learner's part, willingness to put extra effort into the learning process, to take it outside the classroom and build on it by independent learning activities. The target-language environment provides a head start for ESL students in these endeavours, but EFL learners can certainly overcome this inherent "disadvantage" by engaging in a variety of language learning activities on their own, by doing their studies elaborately enough to ensure 'depth of processing' and greater success.

As emphasized by Skehan, "cluster analysis is a technique that should be judged mainly by the significance of the results it produces" (1986:86). From this perspective, we can look at the findings of this study with mixed feelings. In the case of 'flat profile' students, cluster analysis essentially duplicates more conventional tools such as regression and factor analysis. However, in the case of 'saw-toothed' profiles, results obtained by this technique do seem to provide additional insight into the characteristics of the language learner. These findings suggest that

cluster analysis is able to reveal configurations of strategy use, and probably patterns in other individual differences, that enable learners to perform in a certain way.

When giving recommendations to our students as to what they may do to enhance their lexical learning we may indeed suggest that they employ a variety of language learning activities and spend a considerable amount of time on lexical acquisition. We must, however, beware of considering all strategies as necessarily universally valid or useful to all learners and of believing that strategies used by successful students will be absolutely helpful to the less able ones. As our results point out, it may well be that a particular group of strategies, rather than single, specific strategies, aid vocabulary learning to a greater extent. Also, it may be the quality of strategy use rather than the sheer quantity that determines their success for particular students in specific situations.

Encouraging learners to reflect on their personal practices for vocabulary study may increase their awareness of what they do, provide them with a starting point to assess the effectiveness of their efforts in relation to their progress, and possibly discover many other strategies that would suit their personal learning style.

After all, lexical learning is an on-going, life-long process, heavily influenced by individual preferences, personality differences, motivational factors and a host of other variables. Consequently, no vocabulary learning strategy can be effective for all learners. What is essential then in enhancing students' lexical competence, is to make them aware of all the possible ways vocabulary acquisition can be approached and, ultimately, make them responsible for their own learning.

5.2. LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FUTURE RESEARCH

Like so many other studies investigating issues within the area of individual differences, this research may be found wanting if viewed from a theory-then-research, hypothesis-testing perspective. However, it needs to be emphasized that the methodological approach used in this study has a lot more to do with exploratory research, i.e. research that describes phenomena rather than explains them. It is important to bear in mind that cluster analysis is essentially an exploratory tool, not a hypothesis-testing technique. There is little consensus as to which clustering method suits best a certain type of data. Consequently, it is suggested that whenever it is possible, at least two different clustering schemes should be applied to confirm cluster structure.

What this study has set out to do is describe how students approach the task of vocabulary learning, and to explore the relationship between strategy use and performance on measures of vocabulary knowledge and overall language proficiency. The only background variable whose effect has been accounted for is the context of language learning. It remains for future studies to try to isolate individual variables and investigate the relative importance of the use of particular strategies in a more controlled and systematic manner.

With regard to broader perspectives in strategy research overall, it is also up to future studies to attempt to develop taxonomies of vocabulary learning strategies and to try to investigate their theoretical basis, as well as to explore their trainability.

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APPENDIX A

Consent Form to Participate in Research

This is to state that I agree to participate in a program of research being conducted by Izabella Sabo under the supervision of Prof. Patsy Lightbown of the TESL Centre at Concordia University, Montreal.

PURPOSE

I have been informed that the purpose of the research is to gain a better insight into how students learn new words in English as a foreign language.

PROCEDURES

I have been informed that this research will be conducted during my regular English classes and that I will have to fill out a questionnaire and complete two tests. The data collection will take place on 2 separate occasions, each of which should not last for more than 20-25 minutes. I understand that nonparticipation or discontinuance will not affect my course grade in any way.

CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at any time without negative consequences.
- I understand that my participation in this study is CONFIDENTIAL. My name is needed only so that my questionnaire responses could be matched with my test scores. Only the researcher will know my identity.
- I understand that the data from this study may be published.
- I understand the purpose of this study and know that there is no hidden motive of which I have not been informed.
- I understand that I have the right to be informed about the results of this study in general, and my scores in particular.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) _____

SIGNATURE _____

DATE _____

APPENDIX B

The 'Approaches to Vocabulary Study' Questionnaire

INSTRUCTIONS

The aim of this questionnaire is to help us understand how students learn new words in English as a second language.

We are interested in your PERSONAL approach to vocabulary learning. It is extremely important that you answer each question as HONESTLY as you can. This is NOT a test, so there are no right or wrong answers. Simply try to reflect on what is typical of you and your usual activities.

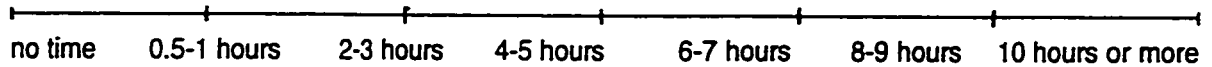
This information will be used only for the purposes of our research. We need your name only so that we can match the questionnaire to the vocabulary tests we are using in the research.

Thank you for your cooperation!

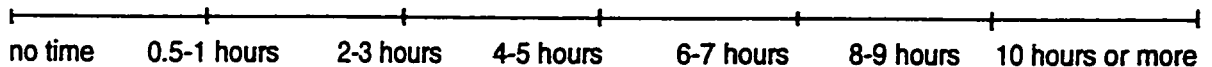
BACKGROUND INFORMATION

1. Name _____
2. Age _____
3. Sex: a) male
b) female
4. Field of study: _____
5. Mother tongue: _____
6. Other languages spoken: _____
7. At what age did you start learning English? _____
8. How do you feel about learning a new language?
 - a) I don't like doing it.
 - b) I don't mind doing it.
 - c) I love doing it.

1. How much time each week do you usually spend studying English outside class, in learning activities that YOU initiate? (Please, indicate the amount by placing an X at the appropriate place along the line.)



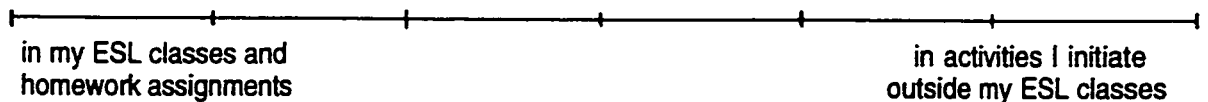
2. How much of that time do you usually spend each on VOCABULARY learning each week?



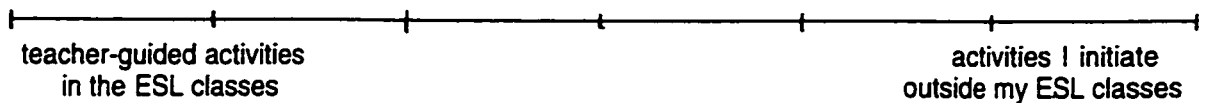
3. What is your MAIN source of new English words? (Between the two endpoints on the line, choose a point that represents your position and indicate it with an X.)



4. Where do you get MOST of the opportunities to practice English vocabulary?



5. What kind of activities do you PREFER to participate in and learn new words from?



6 Which of these learning activities, if any, do you do on a regular basis outside class time. Please check an item (✓) ONLY if you do the activity VERY OFTEN.

- I listen to the news or other English language programs on the radio.
- I make up a sentence with the word I'm trying to memorize.
- I go to English movies.
- I help myself remember a word by associating it to an English word I know.
- I initiate conversations in English with native speakers and/or my fellow students.
- I keep a vocabulary notebook/self-made dictionary.
- I write letters in English.
- I copy/write down the word I'm learning several times.
- I keep my diary in English.
- I group words together according to the field/topic/area they belong to.
- I read out loud in English.
- I look up in my dictionary English words I have encountered during the day/week.
- I read English books, magazines or newspapers.
- I compile lists of the words that I encounter in my ESL class or in my independent studies.
- I watch English TV shows, films and other programs.
- I help myself remember a word by associating it to a word in my mother tongue.
- I talk to myself in English (mentally or out loud).
- I review my vocabulary notes regularly.
- I play games in English (including computer games).
- I repeat the word several times (mentally or out loud).

7. Do you write down the English words that you are learning in class or in your independent studies?



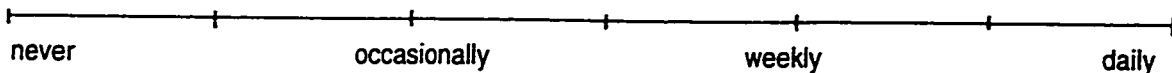
7a. If you do write down English words that you are learning, why do you USUALLY do so?

- a) In order to come back to them later and review them.
- b) The act of writing helps me remember the word more easily.

7b. Where do you USUALLY write the English words you are learning? (Please, choose only ONE.)

- a) In a special notebook (a vocabulary notebook, binder or folder)
- b) In a self-made dictionary
- c) In a section of my course notebook reserved for English vocabulary.
- d) In my course notebook together with other notes from my ESL classes.
- e) On hand-outs I receive in class.
- f) On scrap paper.

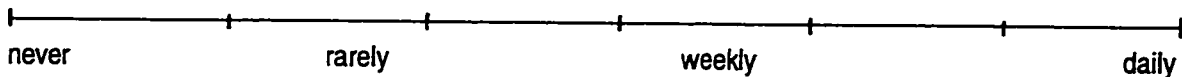
7c. How often do you review the words you have written down?



7d. How do you usually review the English words you have written down?

- a) I don't usually review English words I am learning.
- b) I read and re-read to myself some of the English words I have recorded.
- c) I ask someone to quiz me about some of the English words I have recorded.
- d) I quiz myself about some of the English words I have recorded.
- e) I post word lists/charts/diagrams, etc. on walls/the fridge and go over them.
- f) Other. Please specify. _____

8. How often do you consult a dictionary outside of your English classes?



8a. What do you usually read when you look up a word in a dictionary?

- a) Only the definition.
- b) The definition and the examples which tell me how the word is used.
- c) The definition, the examples, and also the information on related words, on pronunciation, synonyms and idiomatic expressions.

8b. What do you USUALLY do when you look up a word in the dictionary?

- a) I make no special effort to memorize the word.
- b) I repeat the word several times mentally or aloud.
- c) I enter the word and its meaning into my vocabulary notebook.

9. In your opinion, what aspect of language is the most important and should, therefore, be given priority and prominence? For each level, choose ONE feature from the list below and write it on the appropriate line:

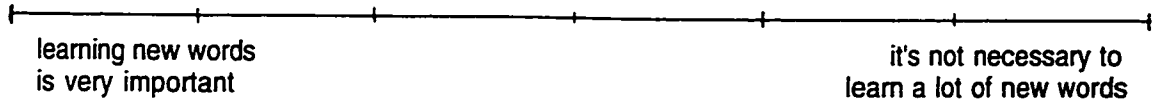
- | | |
|---------------------------------|---------------------------|
| - listening comprehension | - idiomatic expressions |
| - reading comprehension | - pronunciation |
| - simple conversational phrases | - grammar |
| - cultural information | - spelling |
| - vocabulary | - other (please, specify) |
| - appropriate style | |

a) in the initial stage of language learning? _____

b) at the intermediate level? _____

c) at the advanced level? _____

10. How do you feel about vocabulary learning?



11. Which of these statements do you agree with more?

- a) It is very important to learn to speak and write a new language correctly. It is better to know fewer words but use them in grammatically correct sentences.
- b) Vocabulary knowledge is more important than correct grammar. It is better to know more words, even if some sentences are ungrammatical.

12. What do you usually do in situations when you are not certain how to say something in correct English?

- a) I keep quiet and talk only when I'm sure that I can say things correctly.
- b) I go ahead and try my best anyway.

13. How do you feel when you make grammatical errors while speaking or writing in English?

- a) I'm really annoyed by my incorrect grammar. I wish I could take my words back to reformulate them.
- b) I don't care much about grammatical errors as long as I can get my message across.

14. How would you define your vocabulary learning goals? (Please, select only ONE.)

- a) I don't have any specific goals for vocabulary learning.
- b) I want to learn more words.
- c) I want to learn words related to academic study.
- d) I want to learn words for casual conversations.
- e) Other. Please specify: _____

15. What do you consider to be the greatest strength of your vocabulary knowledge?

16. What do you consider to be the greatest weakness of your vocabulary knowledge?

17. When learning new English words, do you look for similarities between English words and words in your mother tongue and/or other languages you know?

- a) Yes, because making comparisons between languages can help me learn new English words.
- b) No, because every language is a system on its own; comparisons would only confuse me.
- c) My mother tongue and/or other languages I speak have so little in common with English that I don't bother making comparisons.

- For the following four questions, check (✓) 1 or 2 answers which are typical of you.

18. What do you usually do when you encounter an unknown word while reading (out of class)?
- ignore it
 - write it on a piece of paper in order to check it in a dictionary later
 - try to relate it to a similar word in my mother tongue or another language I know
 - try to guess at its meaning from the context
 - look it up in a dictionary
19. What do you usually do when you encounter an unknown word while listening to someone talking in English?
- ignore it
 - make a mental note of the word in order to check it in a dictionary later
 - try to relate it to a similar word in my mother tongue or another language I know
 - try to guess at its meaning from the context
 - ask the speaker for clarification
20. What do you usually do when you don't know a word you need in speaking?
- avoid it
 - use gestures to convey its meaning
 - "borrow" a word from another language I know
 - make up an English-sounding word for it
 - paraphrase (describe) it
 - ask someone for the correct word
21. What do you usually do when you don't know a word you need in writing (out of class)?
- avoid it
 - "borrow" a word from another language I know
 - make up an English-sounding word for it
 - paraphrase (describe) it
 - consult a dictionary

APPENDIX C

The Yes/No Tests Used in the Study

INSTRUCTIONS

Name: _____
(family name) (given name/s)

This test has three pages. You will find these instructions at the top of each page:

Read through the list of words carefully. For each word: if you know what it means, place a check mark [✓] in the box next to the word. If you don't know what it means, or if you aren't sure, leave the box BLANK.

Here is an example:

man	[✓]	You know what this word means, so you place a check mark in the box.
atwater	[]	Although you may have seen this word before, you don't know what it means, so you leave its box blank.

It is important NOT to guess on this test, because some of the words do not have meaning in English. When you are not sure of a word's meaning, leave the box next to it BLANK.

TEST A01

Read through the list of words carefully. For each word: if you know what it means, place a check mark [✓] in the box next to the word. If you don't know what it means, or if you aren't sure, leave the box BLANK.

- | | | |
|--------------------------------------|--|---------------------------------------|
| <input type="checkbox"/> rudge | <input type="checkbox"/> elphick | <input type="checkbox"/> disgust |
| <input type="checkbox"/> mass | <input type="checkbox"/> hoard | <input type="checkbox"/> bow |
| <input type="checkbox"/> literate | <input type="checkbox"/> misrequite | <input type="checkbox"/> todd |
| <input type="checkbox"/> hollow | <input type="checkbox"/> podiast | <input type="checkbox"/> privilege |
| <input type="checkbox"/> correspond | <input type="checkbox"/> intimant | <input type="checkbox"/> rear |
| <input type="checkbox"/> greer | <input type="checkbox"/> subtract | <input type="checkbox"/> symmetry |
| <input type="checkbox"/> pulp | <input type="checkbox"/> minimum | <input type="checkbox"/> insurance |
| <input type="checkbox"/> exemption | <input type="checkbox"/> compass | <input type="checkbox"/> spalding |
| <input type="checkbox"/> carotic | <input type="checkbox"/> wax | <input type="checkbox"/> pegler |
| <input type="checkbox"/> even | <input type="checkbox"/> arc | <input type="checkbox"/> degenerate |
| <input type="checkbox"/> penalty | <input type="checkbox"/> dispose | <input type="checkbox"/> brief |
| <input type="checkbox"/> score | <input type="checkbox"/> squeeze | <input type="checkbox"/> opie |
| <input type="checkbox"/> tissue | <input type="checkbox"/> endanger | <input type="checkbox"/> keir |
| <input type="checkbox"/> criterion | <input type="checkbox"/> riot | <input type="checkbox"/> watler |
| <input type="checkbox"/> asbestial | <input type="checkbox"/> altogether | <input type="checkbox"/> faminisation |
| <input type="checkbox"/> obscure | <input type="checkbox"/> upkeep | <input type="checkbox"/> arbus |
| <input type="checkbox"/> concave | <input type="checkbox"/> outlet | <input type="checkbox"/> install |
| <input type="checkbox"/> constagnate | <input type="checkbox"/> break without | <input type="checkbox"/> register |
| <input type="checkbox"/> caste | <input type="checkbox"/> execute | <input type="checkbox"/> sparse |
| <input type="checkbox"/> fragile | <input type="checkbox"/> boobier | <input type="checkbox"/> activate |

Swansea vocabulary tests: v1.1 1992

test no A01

h_____

f_____

Dm_____

TEST A07

Read through the list of words carefully. For each word: if you know what it means, place a check mark [✓] in the box next to the word. If you don't know what it means, or if you aren't sure, leave the box BLANK.

- | | | |
|--------------------------------------|------------------------------------|-------------------------------------|
| <input type="checkbox"/> elaborate | <input type="checkbox"/> amagran | <input type="checkbox"/> brittle |
| <input type="checkbox"/> genetic | <input type="checkbox"/> convex | <input type="checkbox"/> deny |
| <input type="checkbox"/> compound | <input type="checkbox"/> nichee | <input type="checkbox"/> talent |
| <input type="checkbox"/> pellow | <input type="checkbox"/> pool | <input type="checkbox"/> starch |
| <input type="checkbox"/> federation | <input type="checkbox"/> municipal | <input type="checkbox"/> address |
| <input type="checkbox"/> eventually | <input type="checkbox"/> summon | <input type="checkbox"/> awkward |
| <input type="checkbox"/> stephonitis | <input type="checkbox"/> architect | <input type="checkbox"/> analogy |
| <input type="checkbox"/> clinic | <input type="checkbox"/> petroleum | <input type="checkbox"/> beamand |
| <input type="checkbox"/> astin | <input type="checkbox"/> refract | <input type="checkbox"/> pursue |
| <input type="checkbox"/> repel | <input type="checkbox"/> mascarate | <input type="checkbox"/> offspring |
| <input type="checkbox"/> microscope | <input type="checkbox"/> refurge | <input type="checkbox"/> drawback |
| <input type="checkbox"/> latent | <input type="checkbox"/> pruden | <input type="checkbox"/> utilize |
| <input type="checkbox"/> flash | <input type="checkbox"/> crust | <input type="checkbox"/> discordage |
| <input type="checkbox"/> gurley | <input type="checkbox"/> spackman | <input type="checkbox"/> reveal |
| <input type="checkbox"/> partial | <input type="checkbox"/> cast | <input type="checkbox"/> cambule |
| <input type="checkbox"/> scope | <input type="checkbox"/> valid | <input type="checkbox"/> hyppolite |
| <input type="checkbox"/> intellect | <input type="checkbox"/> shield | <input type="checkbox"/> focalise |
| <input type="checkbox"/> cantileen | <input type="checkbox"/> utting | <input type="checkbox"/> inflict |
| <input type="checkbox"/> commutulate | <input type="checkbox"/> thrive | <input type="checkbox"/> diagonal |
| <input type="checkbox"/> holledge | <input type="checkbox"/> bibby | <input type="checkbox"/> incentive |
-
-

Swansea vocabulary tests: v1.1 1992

test no A07

h_____

f_____

Dm_____

TEST A10

Read through the list of words carefully. For each word: if you know what it means, place a check mark [✓] in the box next to the word. If you don't know what it means, or if you aren't sure, leave the box BLANK.

<input type="checkbox"/> campaign	<input type="checkbox"/> vacant	<input type="checkbox"/> deserve
<input type="checkbox"/> deprive	<input type="checkbox"/> widgey	<input type="checkbox"/> louvrage
<input type="checkbox"/> overseas	<input type="checkbox"/> cowdery	<input type="checkbox"/> cash
<input type="checkbox"/> insult	<input type="checkbox"/> bias	<input type="checkbox"/> fragile
<input type="checkbox"/> incarminate	<input type="checkbox"/> credible	<input type="checkbox"/> oligation
<input type="checkbox"/> alcohol	<input type="checkbox"/> guarantee	<input type="checkbox"/> pin
<input type="checkbox"/> filter	<input type="checkbox"/> superfluous	<input type="checkbox"/> revolve
<input type="checkbox"/> lump	<input type="checkbox"/> expostulant	<input type="checkbox"/> recur
<input type="checkbox"/> protein	<input type="checkbox"/> auner	<input type="checkbox"/> warman
<input type="checkbox"/> watchorn	<input type="checkbox"/> mood	<input type="checkbox"/> opaque
<input type="checkbox"/> release	<input type="checkbox"/> commodity	<input type="checkbox"/> vigorous
<input type="checkbox"/> fearn	<input type="checkbox"/> stroke	<input type="checkbox"/> slice
<input type="checkbox"/> kirchin	<input type="checkbox"/> constitution	<input type="checkbox"/> atribus
<input type="checkbox"/> impetus	<input type="checkbox"/> radication	<input type="checkbox"/> academic
<input type="checkbox"/> portion	<input type="checkbox"/> semple	<input type="checkbox"/> arctic
<input type="checkbox"/> meldrum	<input type="checkbox"/> haime	<input type="checkbox"/> thermal
<input type="checkbox"/> junior	<input type="checkbox"/> instere	<input type="checkbox"/> sustain
<input type="checkbox"/> rural	<input type="checkbox"/> consent	<input type="checkbox"/> savourite
<input type="checkbox"/> courtery	<input type="checkbox"/> hodder	<input type="checkbox"/> display
<input type="checkbox"/> membrane	<input type="checkbox"/> evoke	<input type="checkbox"/> ellipse

Swansea vocabulary tests: v1.1 1992

test no A10

h_____

f_____

Dm_____

APPENDIX D

The Cloze Test Used in the Study

INSTRUCTIONS

Name: _____
(family name) (given name/s)

In the following text, a number of words have been omitted. Your task is to fill in the blanks with the appropriate words from the list below. The words should be inserted in the exact form that they are given. Note that there are more words than blanks, and that each word can be used only once.

What You Didn't Know about Risk

Are you alarmed by the amount of man-made pesticide that may be in your food? If so, consider this: When a _____ biologist added up the naturally occurring chemicals in a regular diet, he found that we eat about 10,000 times more _____ pesticide than the man-made variety. Do you _____ about picking up germs from a hospital? You're more _____ to get them from the money in your pocket. About one of every ten coins and almost half the paper currency carry _____ organisms.

These are just a few _____ of risk analysis, a _____ that has come to the fore in the past 15 years as computers and highly sensitive measurement techniques have brought new _____ to the task of assigning numbers to probabilities. How we _____ these numbers is influencing the way we live, as well as how society _____ limited resources.

When psychologists _____ three groups of ordinary citizens to _____ 30 activities, substances and technologies by risk, and then compared the _____ with ratings assigned by a _____ of experts, they were in for a surprise. Sometimes the citizens and the experts agreed, such as on the risk of motor _____. But on others there were large _____. What, the scientists asked, was influencing the public's perception of risk? They found that the public responds differently to _____ and involuntary risks. Also, people tend to _____ the probability of splashy and dreadful deaths and underestimate common but far more deadly risks. This is no surprise at all, given the influence the media have over our lives: _____ deaths make the _____ page; ordinary deaths wind up on the obituary page.

activate

allocates

analogy

asked

contempt

equation

decade

discipline

discrepancies

diverge

examples

front

infectious

interpret

license

likely

natural

overestimate

panel

precision

prominent

rate

results

scope

spectacular

stripe

surplus

vehicles

voluntary

worry

APPENDIX E-1

1. Variable for Native Language - ESL Group

<u>Code</u>	<u>Language</u>	<u>No. of Speakers</u> (total 47)
01	Arabic	8
02	Bengali	1
03	Bulgarian	1
04	Cantonese	7
05	Chinese	7
06	Farsi	3
07	French	4
08	Greek	2
09	Japanese	2
10	Korean	1
11	Persian	2
12	Polish	2
13	Romanian	1
14	Russian	2
15	Serbo-Croatian	1
16	Spanish	2
17	Tamil	1

APPENDIX E-1

2. Variable for Native Language - EFL Group

<u>Code</u>	<u>Language</u>	<u>No. of Speakers</u>	
		(total 43)	
13	Romanian	2	(4.6%)
15	Serbo-Croatian	34	(79.1%)
18	Hungarian	5	(11.7%)
19	Slovak	2	(4.6%)

APPENDIX E-2

1. Variable for Field of Study - ESL Group

<u>Code</u>	<u>Description</u>	<u>No. of Speakers</u> (total 47)
1	COMMERCE AND ADMINISTRATION [including accounting, administrative management, commerce, economics, finance and management information systems]	18 (38.3%)
2	ENGINEERING AND COMPUTER SCIENCE [including civil engineering, computer science, industrial engineering and mechanical engineering]	12 (25.5%)
3	FINE ARTS [including cinema, contemporary dance, drama, film production, music, photography and theatre]	4 (8.5%)
4	HUMANITIES [including child studies, education, history, linguistics, literature, philosophy and psychology]	7 (14.9%)
5	SCIENCES [biochemistry, including biology and chemistry]	6 (12.8%)

APPENDIX E-2

2. Variable for Field of Study - EFL Group

<u>Code</u>	<u>Decription</u>	<u>No. of Speakers</u> (total 43)
1	COMMERCE AND ADMINISTRATION [including accounting, administrative management, commerce, economics, finance and management information systems]	12 (27.9%)
2	ENGINEERING AND COMPUTER SCIENCE [including civil engineering, computer science, industrial engineering and mechanical engineering]	0
3	FINE ARTS [including cinema, contemporary dance, drama, film production, music, photography and theatre]	6 (13.9%)
4	HUMANITIES [including child studies, education, history, linguistics, literature, philosophy and psychology]	21 (48.9%)
5	SCIENCES [biochemistry, including biology and chemistry]	4 (9.3%)

APPENDIX F

ANOVA Results for the Five Variables in the Eight-cluster Solution

Table F1: Analysis of variance for TIME

Source	DF	SS	MS	F
Cluster	7	36.77	5.25	54.95*
Error	82	7.83	.09	
Total	89	44.61		

*p < .000

Table F2: Analysis of variance for INDEPENDENCE

Source	DF	SS	MS	F
Cluster	7	15.93	2.27	16.76*
Error	82	11.13	.13	
Total	89	27.06		

*p < .000

Table F3: Analysis of variance for NOTE-TAKING

Source	DF	SS	MS	F
Cluster	7	8.25	1.17	6.53*
Error	82	14.81	.18	
Total	89	23.07		

*p < .000

Table F4: Analysis of variance for REVIEW

Source	DF	SS	MS	F
Cluster	7	26.84	3.83	46.87*
Error	82	6.70	.08	
Total	89	33.55		

*p < .000

Table F5: Analysis of variance for DICTIONARY USE

Source	DF	SS	MS	F
Cluster	7	9.07	1.29	12.02*
Error	82	8.84	.11	
Total	89	17.92		

*p < .000

APPENDIX G

Cluster Characteristics with Regard to Background Variables

Table G1: Cluster characteristics with regard to background variables

Cluster	N	group membership	mean age	sex	field	L1	other Ls	mean age of start of LL
1	4	ESL= 4 EFL= 0	27.50	M= 1 F = 3	e x t	e x t	B= 1 M= 3	15.25
2	7	ESL= 7 EFL= 0	21.14	M= 4 F = 3	r e m	r e m	B= 4 M= 3	11.75
3	25	ESL=15 EFL=10	21.96	M=15 F =10	e l y	e l y	B=12 M=13	13.75
4	17	ESL= 8 EFL= 9	20.94	M=12 F = 5	h e t	h e t	B= 7 M=10	6.00
5	8	ESL= 1 EFL= 7	18.88	M= 3 F = 5	e r o	e r o	B= 4 M= 4	8.25
6	23	ESL=10 EFL=13	22.61	M= 9 F =14	g e n	g e n	B= 7 M=16	8.50
7	5	ESL= 2 EFL= 3	24.20	M= 1 F = 4	e o u	e o u	B= 0 M= 5	10.50
8	1	EFL= 1	20.00	M= 1	s	s	M= 1	12.00

APPENDIX H

Results Pertaining to Related Variables

Table H1. Mean scores for the ability to state learning goals

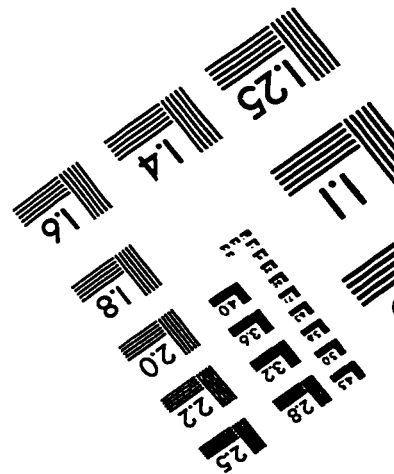
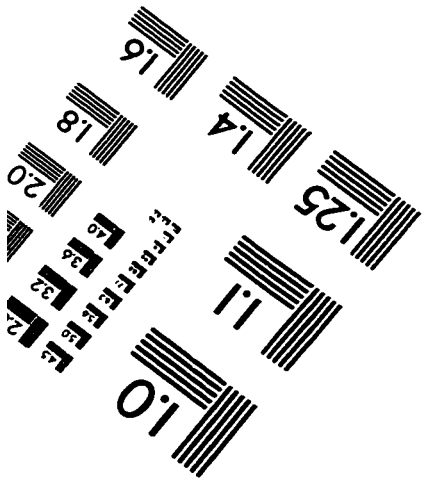
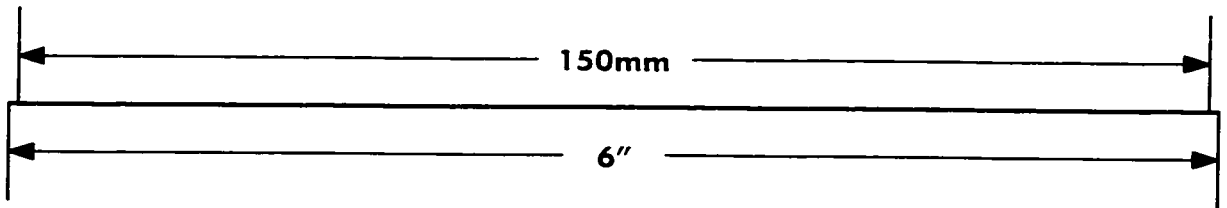
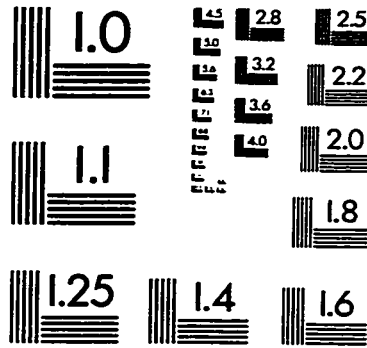
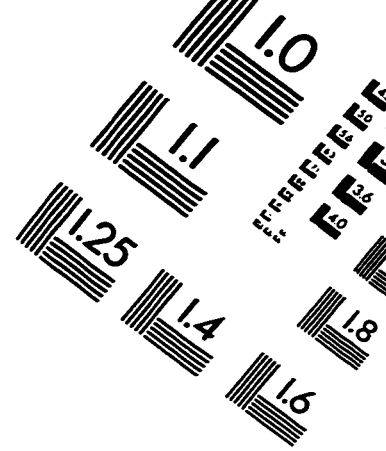
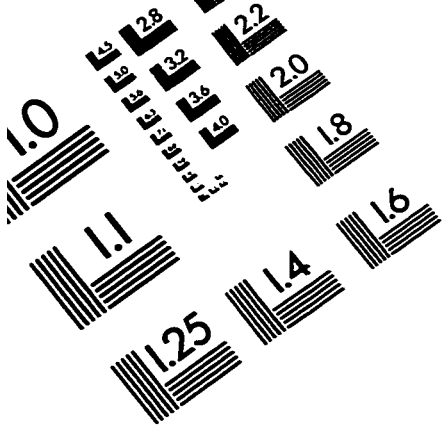
	M	SD
Cluster 1	1.00	0.85
Cluster 2	1.42	0.59
Cluster 3	0.85	0.84
Cluster 4	0.82	0.72
Cluster 5	1.00	0.50
Cluster 6	1.27	0.52
Cluster 7	0.40	0.89
Cluster 8	0.00	
overall	0.98	0.73

Note: Score range on this variable was from 0 to 2.

Table H2. Mean scores for the variable of 'learner orientation'

	M	SD
Cluster 1	0.66	0.54
Cluster 2	1.23	0.80
Cluster 3	0.74	0.77
Cluster 4	0.58	0.61
Cluster 5	0.41	0.79
Cluster 6	1.44	0.62
Cluster 7	1.20	0.86
Cluster 8	0.00	
overall	0.94	0.78

Note: Higher scores indicate stronger meaning-orientation



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