CHAPTER THREE
RESEARCH METHODOLOGY

Introduction

The overall objective of this study is to determine the perceptual learning style preferences, the learning strategies and the relationship between perceptual learning style preferences and learning strategies of selected Malay students from a university in Malaysia. This chapter discusses the research framework, measurement of the variables and the methodology used in achieving the objectives of this study. It examines the procedures for sample selection, selection of respondents for case studies, pilot testing of the questionnaires, reliability of the scales used in the questionnaires, selection of statistical techniques for data analysis as well as the selection of the confidence level in concluding significant relationships. In addition, this chapter also discusses the method used in analysing the transcripts of interviews from the case studies.

Research Framework

The major variables in this study are perceptual learning style preferences and learning strategies. Previous studies on perceptual learning style preferences (Rossi-Le, 1989 and Reid, 1987) have suggested that these variables are a function of certain personal variables of the respondents. The personal variables are age, gender, academic level, field of study, race, culture and duration of study of the English language. In this study, the respondents are

from the same race, similar age group, academic level and cultural background. Therefore, the variables that could contribute to differences in perceptual learning style preferences and learning strategies are gender, duration of study, proficiency in the English language and field of study. In addition to this, learning styles in turn have been found to influence selection of learning strategies (Rossi-Le, 1989). The research framework is given in Figure 3.1
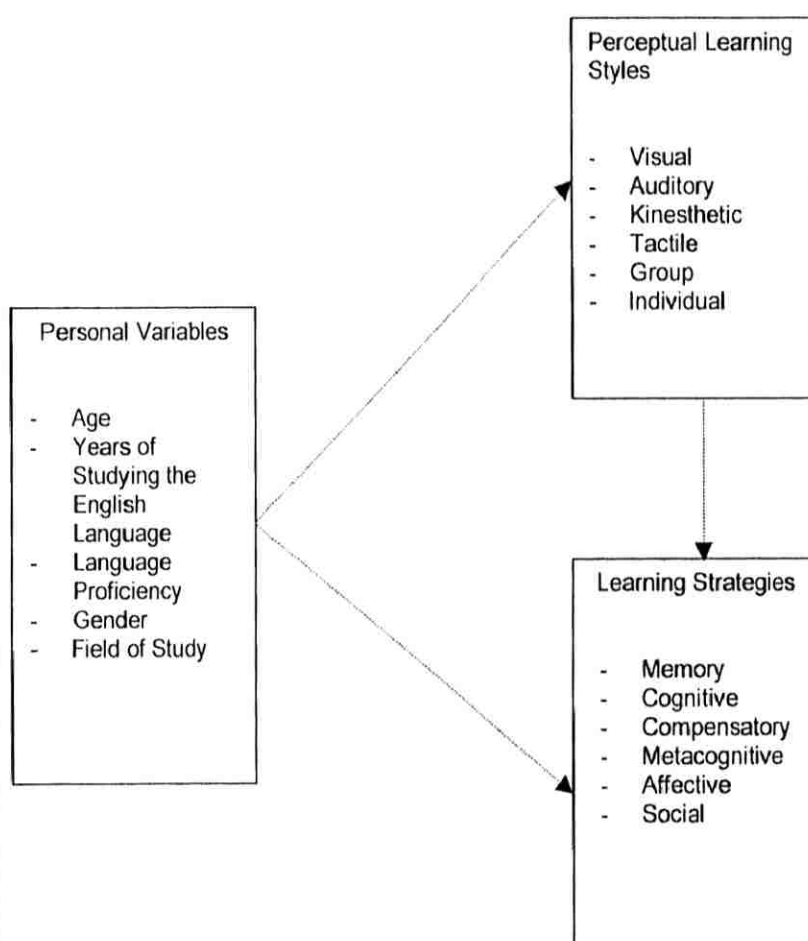

Figure 3.1 – Research Framework

Measurement of Research Variables

The survey method and case studies were used in this research. For the survey, the research variables were measured through the use of questionnaires. Three types of questionnaires were used in this study, that is, the background questionnaire, the Perceptual Learning Style Preference (PLSP) questionnaire and the Strategy Inventory for Language Learning (SILL). In addition to these three instruments, three case studies were carried out to obtain an in-depth understanding of the process involved when the respondents select their learning strategies. Data from these case studies was collected by means of interviews.

Determination of the Background of the Respondents

An adapted version of a questionnaire that was designed by Oxford (1990b) was used to determine the demographic variables and background of the respondents (see Appendix A). The questionnaire comprised of seventeen (17) questions. Questions 1 to 10 solicited personal information such as the name of respondents, faculty, age, gender, hometown, state, grades obtained in English at the SPM level (this examination is taken by students at the end of eleven years of schooling, namely, six years in primary school and five years at the secondary school level), the grades obtained in the Foundation English Programme (set by the university), language spoken by the respondents at home and the number of years they had been studying the English language.

Question 11 required the students to rate their overall proficiency in the English Language using a four-point Likert scale ranging from 1 to 4 where 1 represents "poor", 2, "fair", 3, "good" and 4, "excellent". Students rated "excellent", should they be able to read, write, listen and speak with less than twenty percent errors. They rated themselves "good", should they be able to use these four language skills with sixty percent accuracy. They rated themselves "fair", should they not have more than fifty percent errors when practising the four language skills. Students rated themselves "poor" if they considered themselves making more than fifty percent errors with the four language skills.

Question 12 required the respondents to rate their overall proficiency in the English Language in comparison to the proficiency of their classmates. Question 12 used the same four-point rating scale as used in question 11. In question 13 students rated the importance of the English language. A three-point scale ranging from "very important", "important" and "not so important" was used to measure the level of importance. In question 14, the respondents selected reason(s) for learning the English language. They could select one or more of the six reasons provided. They were also given an option to add on reasons that might not be in the list. Question 15 asked the respondents whether they enjoyed learning the language. Question 16 solicited information regarding other languages the respondents may have studied. The last question in this questionnaire, that is, question 17 required the respondents to state their favourite experience(s) in learning the English language.

Measurement of Perceptual Learning Style Preferences

The perceptual learning style preferences of the respondents were measured using the Perceptual Learning Style Preference (PSPL) questionnaire which was developed by Reid (1987). This instrument was chosen for this study as it has been designed specifically for adult non-native speakers of English and encompasses both sensory and sociological learning style preferences. This is a self-reporting questionnaire. The cover page of this questionnaire, apart from giving directions on how to answer the questionnaire, also required the respondents to state their name and faculty, in order to match this questionnaire with the SILL (which was to be administered later).

The questionnaire consists of 30 statements pertaining to the six learning styles, that is, visual, auditory, kinesthetic, tactile, group and individual learning. There are five statements in each of these six learning styles. These statements have been arranged randomly in the questionnaire. The response for each statement is measured using a five-point Likert scale ranging from 5 for "strongly agree", 4 for "agree", 3 for "undecided", 2 for "disagree" and 1 for "strongly disagree". At the end of the questionnaire, the respondent is provided with the method for calculating the score for each of the six learning style preferences. In order to obtain the score for visual learning style, the respondent added the scores for statements 6, 10, 12, 24 and 29 and then multiplied the total by 2. To obtain the score for auditory learning style, scores for statements 1, 7, 9, 17 and 20 were added and the total multiplied by 2. This procedure is repeated for

kinesthetic (statements 2, 8, 15, 19 and 26), tactile (statements 11, 14, 16, 22 and 25), group (statements 3, 4, 5, 21 and 23) and individual (statements 13, 18, 27, 28 and 30) learning styles.

The scores obtained by the respondents enabled them to determine whether they belonged to major, minor or negligible categories of learning style preferences. If the score for a particular learning style preference was between 38 to 50, the respondent was said to have a major learning style preference. If the score fell between 25 and 37, the respondent was said to have a minor learning style preference. Scores between 0 to 24 indicate the respondent has a negligible learning style preference.

Determining the Learning Strategies of Respondents

The instrument used to determine the ESL learning strategies of the respondents in this study is the Strategy Inventory for Language Learning (SILL). The SILL was originally devised by Oxford (1986a) for use in the Language Skill Change Project of the US Army Research Institute for the Behavioural and Social Sciences. Based on second language strategy explorations of researchers such as Bialystok (1981), Naiman et al. (1975), Rubin (1975, 1981), O'Malley et al. (1986a and b) and Weinstein (1978), a comprehensive taxonomy of second language learning strategies was developed and linked to the skill areas of listening, speaking, reading and writing. The result was a survey instrument comprising of 121 items; students responded to each statement on a five-point

Likert scale ranging from "always" or "almost always true to me" (5), "usually true to me" (4), "somewhat true to me" (3), "usually not true to me" (2) to "never or almost never true to me" (1).

A revised version (that is, Version 7.0 ESL/EFL, 1989) of the inventory consisting of 50 items (Reid, 1987, Oxford, 1990b), with simplified language for ESL students was used in this study. The SILL was chosen because it has been specifically designed for assessing second language learning strategies.   It provides a comprehensive inventory of strategies derived from previous research and unlike other instruments, it has been systematically validated in a variety of settings. The SILL is a self-reporting instrument which is accompanied with notes and tables to enable the respondent to identify his or her learning strategies.   The strategies are categorised into six groups (A-E). The six groups of strategies as listed in the inventory are: A. Remembering more effectively (memory), B. Using all your mental processes (cognitive), C. Compensating for missing words (compensatory), D. Organising and evaluating knowledge (metacognitive), E. Managing emotions (Affective) and F. Learning with others (social). Field tests with 1200 university sample and a 483 sample at the Defense Language Institute have demonstrated an internal consistency of 0.96 and 0.95 respectively using the Cronbach alpha method.   The average reliability per sub scale is 0.69. Content validity coefficient based on ratings of the correspondence between the SILL and the taxonomy items as judged by two raters was 0.95 (Oxford, 1989b).

Oxford (1989b) concluded that the SILL has been shown to be "psychometrically stronger than most other self-report learning strategy surveys" (1989b, p. 39).

The overall purpose of the SILL is to assess the frequency with which second language learners use various strategies (Oxford, 1989b). Based on the average score for each group, the ESL learners are categorised as high, medium or low level users of the strategies. To compute the average score for each group, the score associated with the responses for each of the statements in the group is totaled and then the total is divided by the number of statements in that group. Categorisation of ESL learners into their learning strategies is shown in Table 3.1.

Table 3.1
Categorisation of ESL Learners According to their Strategies

Level of Use	Frequency of use	Average Score
High	Always or almost always used	4.5 to 5.0
	Usually used	3.5 to 4.4
Medium	Sometimes used	2.5 to 3.4
Low	Generally not used	1.5 to 2.4
	Never or almost never used	1.0 to 1.4

As in the case of PLSP questionnaire, the respondents were required to write down their names and faculties. This was to enable the researcher to match scores obtained by the respondents in the PLSP questionnaire with that obtained in the SILL.

Determining the Learning Strategies of the Cases

In addition to the three questionnaires, an in-depth study was carried on three cases to better understand the strategies employed by the students in completing classroom activities. In the study of cases, data was collected with the use of a semi-structured interview guide (Appendix D). The SILL was used as a guide to develop the questions that were used in the interviews. During the interviews, the students were free to report on the strategies they used to understand the passages. The researcher probed the students further to enable students clarify their ideas and ascertain what they meant. The researcher ensured that the students kept to the questions relating to the tasks. The interview questions were contextual, that is, based on two reading comprehension tasks that the students had attempted as classroom activities.

These tasks were based on two passages, namely, passage 1 (see Appendix E) and passage 2 (see Appendix F). Passage 1 described the use of mobile phones while passage 2 was on the use of food additives. Both the reading passages were taken from local English daily newspapers on Malaysian settings and described situations which the students were familiar with. The language used in these passages was simple and appropriate with the expected language proficiency level of the students.

The interview sessions were carried out on a one-to-one basis. There were eight sessions for each respondent. The first session was used for ice-

breaking and to establish a relationship of mutual trust and understanding between the researcher and the student.

In the following interview sessions, the students were provided with copies of the reading comprehension passages and their respective answer scripts. This was to enable the students to refer to the reading comprehension passages during the course of the interviews. The students were questioned as to the strategies they had employed to complete the tasks. Some of the questions asked during these sessions referred directly to the categories of strategies as found in the SILL. The students were first questioned on the strategies they had employed while reading and understanding the texts in the given tasks. They were then asked to elaborate on the choice of strategies and how the said strategies had helped them to understand the text. Besides, the researcher sought clarification on the "markings" that the students had made on the reading passages and how these "markings" had aided them in deriving the answers. The "markings" refer to underlining, circling, flow-charts, arrows, diagrams or short notes the students may have made on their reading passages. Examples of questions used in the interview sessions with case 1, that is Hashim (pseudonym), is given in Appendix G. Similar type of questions were used in the interview sessions with cases 2 and 3.

The Study Setting

The University Technology Mara was selected as the study setting. This institution provides training for professional, technical and scientific courses in the fields of trade, industry and science. The students in this institution are predominantly Malays. It is mandatory for students in this university to follow the English Language proficiency programme which is conducted by the Language Centre. This is because most of the professional subjects are taught in the English Language. In any case, the bulk of the reference materials available are in the English Language. This explains the concerted efforts on the part of the faculties and the Language Centre to improve the students' proficiency in the language.

Procedures for Sample Selection

The selection of the respondents for this study was done carefully in line with the objectives of the study. This section describes the selection procedure of respondents used in for the survey and case studies.

Respondents for the Questionnaires

A total of 137 students were selected as respondents for this study. They were from three fields of study, namely, Business Management (42 students), Secretarial Science (54 students) and Computer Science (41 students). The reason for selecting these three groups was that the researcher intended to find out whether field of study could be a factor influencing perceptual learning style

preferences and strategy choice. There were two classes for each field of study at the university. One class from each field of study was used for this study. The selection was based on the willingness of the students in these classes to participate in the study. The respondents were all Malay students and were in the third semester of their study in the university. They were at the intermediate level of the English Language programme. The rationale for selecting students in the third semester of their study was that these students would be well adjusted to the system of learning the English language. Furthermore, by the third semester, they would also have developed definite perceptual learning style preferences and learning strategies.

Selection of Cases

In the study of cases, three students with three different perceptual learning style preferences as determined by PLSP questionnaire were selected. Descriptions of the cases are as follows:

Case I: Had all six learning styles, that is, auditory, visual, kinesthetic, tactile, group and individual as major learning style preferences.

Case 2: Representative of the majority of the respondents in the survey and was therefore a typical case. This student had auditory, kinesthetic, tactile and group as major learning style preferences and visual and individual as minor learning style preferences.

Case 3: Had all six learning styles, that is, auditory, visual, kinesthetic, tactile, group and individual as minor learning style preferences.

These three students were thus selected based on one having major learning style preferences in all the six learning styles, another having minor learning style preferences in all the six learning styles whilst the third had learning style preferences typical of the study sample. The three students were also selected on their willingness to participate in the case study.

Procedures for Data Collection

As mentioned earlier, data for this study was collected by means of three structured questionnaires, namely, the background questionnaire, the PLSP questionnaire and the SILL, as well as three case studies. The questionnaires were personally administered by the researcher. The respondents answered the questionnaires in one sitting. Respondents were informed on the purpose of the study and any doubts on the part of the respondents were clarified. The respondents were given approximately 30 minutes to answer each questionnaire. Three days were set aside for the administration of each questionnaire at the three faculties.

Data collection was scheduled in three phases (see Table 3.2 below). In the first phase, the background questionnaire and the PLSP questionnaire were administered to the respondents. This was carried out in the sixth week of the

Table 3.2
Schedule of Data Collection

Phase	Week	Aim	Activity
1	6	To determine the perceptual learning style preference of the respondents	Administration of the background and PLSP questionnaire
2	8	To determine the learning strategies used by the respondent in ESL learning	Administration of the SILL
3	10 – 14	To obtain a better understanding of the strategies used by three students with different perceptual learning style preferences for a reading comprehension task	Interview sessions with three cases displaying three different perceptual learning style preferences.

academic semester. The sixth week was considered appropriate for data collection because by this time the respondents would be well into the "swing" of their lessons. This would enable them to respond to the questionnaire with greater ease as compared to an earlier time in the semester, at which point the respondents may not have had sufficient practice performing exercises and activities in the English language.

The second phase of data collection was carried out in the eighth week. In the second phase, the SILL was administered to the same group of respondents. By this time the respondents would have had sufficient language practice, by way of classroom exercises and activities which are conducted during the English language lessons. This would enable them to respond to the statements in the SILL with greater ease. The timing as to when to administer the

questionnaire is important, as it will aid in gathering information on the respondents' learning strategies in relation to learning the English language. The timing as to when to administer the PLSP questionnaire and the SILL is important as it will aid in gathering more accurate information on the respondents' learning styles preferences and learning strategies.

The third phase of data collection was carried out from the tenth to fourteenth week. During this third phase, an in-depth study of the learning strategies used by three cases displaying three different learning style preferences was carried out. The data for the case studies was collected through a series of interview sessions. Among the problems associated with collecting data through interviews was a need to establish a mutually trusting relationship between the researcher and the students. This was not a problem as the research was carried out on the researcher's own students. The interview sessions were recorded in audio-tapes. These recordings were transcribed and the transcripts were then shown to the interviewees to check for accuracy. Discrepancies were corrected and the final version shown to the respondents.

Pilot Study

Two of the questionnaires used in this study, that is, the PLSP questionnaire and the SILL consist of related statements. In the case of the PLSP questionnaire, there are five related statements each for visual, auditory, kinesthetic, tactile, group and individual learning style preference. In the case of

the SILL, there are nine related statements for remembering more effectively (memory), fourteen for using all your mental processes (cognitive), six for compensating for missing words (compensatory), nine for compensating for missing knowledge (metacognitive), six for managing emotions (affective) and another six for learning with others (social). The responses to the statements were recorded on Likert scales ranging from 1 to 5. The measure of a particular variable is obtained by summating the scores to form an index score or summated score. Thus for each variable, there is an absolute minimum and an absolute maximum summated score depending on the number of statements.

One of the key concerns about using summated scales as a measurement instrument is its reliability. In order to determine the reliability of the questionnaires, reliability analysis was carried out. The Cronbach Alpha (α) method was selected to determine the reliability of the scales because it is one of the most commonly used reliability coefficients (Norusis, 1990). It is based on the internal consistency of the statements within a test. It provides statistics about inter-item correlation.

The two questionnaires were pilot tested on twenty-two students drawn from the same population as the respondents in this study, that is, they were Malay undergraduates at Universiti Teknologi Mara. They were in the third semester of their professional course and were between 18 –22 years of age.

Table 3.3
Reliability Coefficients for the Variables in the Perceptual Learning Style
Preference Questionnaire

Variables	Cronbach Alpha(α)
Visual	0.77
Auditory	0.86
Kinesthetic	0.79
Tactile	0.92
Group	0.85
Individual	0.83

The reliability statistics for the PLSP questionnaire is shown in Table 3.3 while

that for the SILL is shown in Table 3.4.

Table 3.4
Reliability Statistics for the Variables in the Strategy Inventory for Language
Learning

Variables	Cronbach Alpha(α)
Memory	0.72
Cognitive	0.78
Compensatory	0.81
Metacognitive	0.77
Affective	0.86
Social	0.83

The pilot study showed that both the instruments were reliable and could

therefore be used to collect data for this study.

Data Analysis

Two types of data were obtained from this study. Quantitative data was obtained from the questionnaires and qualitative data from the case studies. These two types of data required different types of analysis.

Analysis of Quantitative Data

The quantitative data obtained in this study was processed using the Statistical Package for Social Sciences (SPSS for Windows version 11). This data consisted of nominal, ordinal and interval data. Gender and field of study were in the form of nominal data. Proficiency in the English Language was in the form of ordinal data. The variables in the PLSP questionnaire that is, visual, auditory, kinesthetic, tactile, group and individual were measured using a 5-point Likert scale. These scales were summated and were subsequently treated as interval data. In order to determine the perceptual learning style preferences of the respondents, the summated score for each channel (variable) was multiplied by 2 and depending on the value of the transformed score, the respondents were described as having that channel as either major, minor or negligible learning style. This transformed the interval data back into ordinal data.

Similarly, the variables in the SILL, that is, memory, cognitive, compensatory, metacognitive, affective and social were measured using a 5-point Likert scale. These scales were summated and were then treated as interval data. Again, in order to determine the level of use of the different

strategies, the average score for each strategy was determined and based on the value of this score, the respondents were described as high, medium or low level users of that particular strategy. This again transformed the interval data into ordinal data.

The statistical techniques used in analysing the quantitative data in this study included descriptive and inferential statistics. Descriptive statistics in the form of frequency and percentage was used to describe the background of the respondents, their perceptual learning style preferences (major, minor or negligible) and levels of use of learning strategies (high, medium or low).

Inferential statistics used in this study were Pearson product moment correlation, Spearman's rank correlation, t-test and one-way ANOVA. Pearson product moment correlation was used to determine whether there were significant relationships between the age of respondents and duration of study with perceptual learning style preferences of the respondents and their learning strategies. Spearman's rank correlation was used to determine whether there was significant relationship between language proficiency of the respondents and their perceptual learning style preferences, as well as, their learning strategies. The t-test was carried out to determine if there was significant difference between male and female respondents in their learning style preferences and use of learning strategies. One-way ANOVA was used to determine whether there was significant difference in the perceptual learning style preferences and in the

learning strategies of respondents who differed in their field of study and proficiency of the English language. The level of significance was set at $p < 0.05$.

Analysis of Qualitative Data

Analysis of the data from the case studies was carried out using content analysis. According to Kerlinger (1973), content analysis is a way of studying and analyzing written communication in a systematic and objective manner. Instead of observing people's behaviour directly or even interviewing them, the researcher takes the communications people have produced and asks questions of these communications. In this study written transcripts were analysed. These transcripts were based on interviews which had the respondents retrospect on various aspects of their language learning. However, the main focus of the case studies was the strategies used by the learners when carrying out reading comprehension tasks.

In content analysis, it is first necessary to define the area or "universe of content" that is to be analysed. In this study, it was the learning strategies used by the students when carrying out reading comprehension tasks. A unit of analysis must also be determined. In this study, the "theme", that is, any proposition or statement the learners made about learning English language is used.

The following criteria were developed to identify the themes or explicit statements of learning strategies:

1. generalisations learners made about themselves, all language learners or about learning strategies;

2. justifications why learners did what they did or to describe the learners' characteristic approach;

3. the responses of the learners were sometimes spontaneous contributions, or they were a response to a probing question put forth by the interviewer (for example, Why?) checking for clarification or consistency;

4. the statement of a learner might be expressed recurringly throughout the interview either using the same phraseology or restated in words; and

5. the statement of a learner might be explained in great detail and/or with a tone of conviction.

Using the above mentioned criteria, the following themes were identified:

1. background of the cases;

2. language proficiency;

3. learning styles preferences of the learner;

4. self image of the ESL learner;

5. effort to learn the English language;

6. reasons for learning the language;

7. home environment for ESL learning;

8. levels of information processing in reading;

9. use of learning strategies; and

10. teaching / learning strategies used by teachers.

In order to facilitate the analysis of the learning strategies used by the students in the reading comprehension tasks, a model of reading strategy based on a reading theory which has been presented and discussed by several researchers such as Gibson and Levin (1975), LaBerge and Samuels (1974) and Kintsch and van Djik (1978) (cited in Kirby, 1988) was used.

According to this model, there are eight hierarchical levels of information processing in reading. The eight levels are shown in Figure 3.2 below. The lowest level is that of a feature. Features are the lines or cues of which letters are composed. Each letter is composed of a different set of features which the brain must learn to recognise. The second level is that of letters, visual patterns composed of features and which in turn are components of high level units. The third level is the level of sounds, which are associated with letters or letter combinations. This level appears in some ways optional in that while sounding out words is common and very helpful in learning to read, it seems to be less likely to occur on when reading skills have developed.
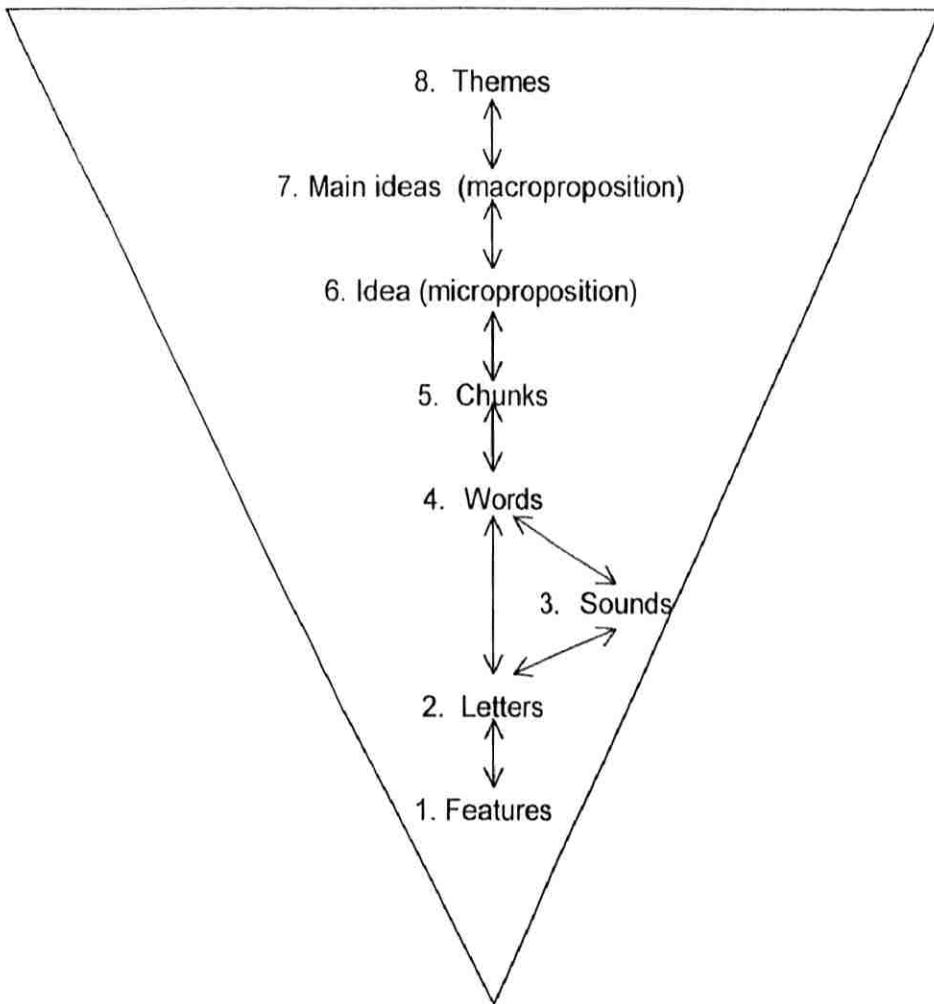
Figure 3.2: Eight Hierarchical Levels of Information Processing in Reading (Kirby, 1988)

There are three possible routes to take from letters to words. One involves a phonological analysis, that is, going through the sound level, whereas the other relies more upon the visual analysis, in a sense going directly from letters to words. The choice of phonological or visual routes represents the first potential area of strategic impact.

The fourth level of analysis is the word level. Words are stored in long-term memory and must be accessed by their visual or phonological features. To access a word may mean to visually recognise it, pronounce it or to recognise its meaning. Skilled readers are seldom conscious of working at levels below the word level. Strategic factors have a role to play in word identification in that two different sources of information can be employed to identify words. One source of information is the visual information contained in the printed page. This information can be analysed either visually or phonologically and can be referred to as "bottom-up" information. The second source of information is what is understood about the text which is being read. This "top-down" information leads the reader to extent certain words or classes of words or perhaps only words that mean certain things or are consistent with certain interpretations. This choice of bottom-up or top-down approach constitutes the second area in which strategies are involved in reading.

The fifth level of analysis has been referred to as the chunk level. In this case, chunk refers to a syntactic phrase or syntactic grouping of words, such as, "the harried housewife", "they surfed the internet" and so on. In order for the meanings of sentences to be constructed, a relatively large number of words must be interpreted, a number which usually exceeds the amount of space available in working memory. Syntactic chunking provides a mechanism whereby, large numbers of words can be subdivided into a more manageable

number of higher level units. Thus, a sentence may consist of 15-20 words, but only four or five chunks, each of which consists of a "unit meaning".

Construction of sentence meaning is the sixth level of analysis, the idea level. Alternatively this can be termed the "microproposition" level (Kintsch and van Dijk, 1978). An "idea" is a basic statement usually involving at least a subject and a predicate. Unlike the previous levels, ideas are no longer exact replicas or direct associations of what is on the page; instead there are abstraction of meaning. The set of ideas in a text represents all of the meaning expressed in that text. In contrast, the seventh level of analysis, that of "main ideas" represents a distillation of what has been presented in the text. The main ideas of the text provide a summary of what it says, that is, the gist of the text, and have to be constructed from the microproposition or ideas, which are presented in the text. The main ideas are often referred to as "macropropositions" of a text.

Levels six and seven involve the generations of meanings from a text. Strategies can be important in the generation of meaning at either or both of these levels. As seen below, strategies at these levels can relate to questions as simple as, whether any meaning at all is generated, or to questions as complex as how does the student summarise a difficult text. A further question within these levels is the degree to which comprehension is assessed or monitored. This is a question of awareness. Again, it seems that some readers continue reading without assessing whether they have understood adequately what they

have read. In contrast, more skilled readers carry out this assessment procedures as they are reading and they carry out appropriate actions to correct any comprehension failures.

The final analysis of reading, analysis is referred to in the figure as the "thematic" level. It is even further removed from the surface structure of the text, just as main ideas represent abstraction from ideas, themes can be seen as abstraction of main ideas. Themes are interpretations of what the text is trying to say and often are not stated explicitly in the text. Themes are not common in expository text because those texts tend to say explicitly what it is that they mean. On the other hand, narratives or literary texts often involve an important implicit thematic level, for example to convey a moral idea. Again, strategies are important at this level because for example many readers may not even recognise that a thematic level exists.

Information processing can be occurring at all levels simultaneously though the reader is usually only consciously thinking or working at one level. In order to work at a particular level smoothly, it is necessary for the lower level to function automatically. For example, if the reader is having difficulty identifying word (level 4), then chunking or simple comprehension (level 5 or 6) can become difficult. Expenditure of conscious effort at any level is likely to inhibit effective functioning at any higher level. To the degree that the level at which one works is determined by styles or strategies, then these will have a major impact upon

performance. For example, if the reader decides that working at the word level is what he or she should be doing, then it is unlikely that much comprehension or thematic analysis will take place. On the other hand, if the reader decides to work at a higher level such as at the level of thematic interpretations, then subtle distinctions at lower levels may be missed or glossed over. In this way a reader may have an expectation of what is saying and therefore may be working at a higher level. However, a text might present information which is contrary to this interpretation; because the student is working at the higher level, this conflicting information is not recognised, and therefore, proceeds with an incorrect interpretation. Editors are well aware of the importance of level of analysis and often read a text several times, each time focussing upon a different level.

It is important to recognise that control or conscious processing can shift back and forth from level to level. Thus, a skilled reader may be reading at the idea of micropropositional level, processing the meaning of each sentence as it is read. In this case, words and chunks would be recognised automatically. As Kintsch and van Dijk (1987) indicate, these micropropositions themselves would be periodically processed to generate macropropositions. If however, two macropropositions were encountered, in proximity to each other, which appeared to state contradictory or at least incompatible facts, processing would probably slow down and control would shift back from the macropropositional to the micropropositional level or even lower. Similarly, macropropositional processing will come to a halt when an unknown word is encountered. The meaning of the

unknown word may be determined by visual or phonological analysis or it may be inferred on the basis of the general meaning of the text so far.

From the preceding account it can be concluded that there are four areas of potential strategy influence in reading. The first two areas of potential strategy influence concern the level of word analysis or word identification (level 4). The third concerns the generation of meaning at the micropropositional or macropropositional levels (level 6 and 7) and the fourth area relates to level 8, the generation of thematic meaning.

Summary

The foregoing account, describes the research framework, research design, instruments for data collection, pilot study, methods used in data collection and data analysis. Analysis of data and the resultant findings will provide answers to the research questions. This is discussed in detail in chapters four and five.