

## CHAPTER TWO LITERATURE REVIEW

### Introduction

The main objective of this study is to determine the perceptual learning styles and learning strategies of selected ESL students in a Malaysian setting. The study further attempts to determine whether there is a relationship between learning styles of the students and their learning strategies. However, before we look at the literature on learning styles and learning strategies, it would be useful to understand the general learning theories and their implications for second language learning.

The review of literature therefore, begins by looking at some of the theories of human learning and second language acquisition and their implications for second language learning. This is followed by a review of the different learning styles theories and models in order to develop a better understanding of the concept of learning styles. In addition to this, since the focus of this study is perceptual learning style, the rationale for selecting this learning style especially in the context of ESL learning is explained. This chapter also looks at research studies on matching teaching styles with learning styles, the variables that influence learning styles, the different ESL learning strategies, factors influencing the selection of learning strategies, research findings on the relationship between learning styles and learning strategies as well as other factors that have been found to influence second language acquisition and learning.

## Learning Theories and Their Implications for Second Language Learning

The review of literature will first look at the theories of learning and the diverse perspectives that form the foundation of varying teaching approaches and methods. Among the theories discussed are those representing classical behaviourism, neo-behaviourism, meaningful learning theory and humanistic psychology.

The best known classical behaviourist was the Russian psychologist, Ivan Pavlov who first introduced the idea of classical conditioning. For Pavlov, the learning process consisted of the formation of associations between stimuli and reflexive responses. Drawing from Pavlov's findings, Watson (1913) introduced the term behaviourist. He adopted the classical conditioning theory as the explanation for learning: by the process of conditioning, we build an array of stimulus-response connections, and more complex behaviours are learned by building up series or chain of responses. Following Watson's theory, for many years, language teaching methods followed a behaviourist tradition.

Skinner (1938) followed in the tradition of Watson. However, he is referred to as neo-behaviourist because he added a unique dimension to behaviourist psychology. Skinner called Pavlovian conditioning, respondent conditioning, since it was concerned with respondent behaviour, that is, behaviour that is elicited by a preceding stimulus. Skinner's operant conditioning attempted to account for most of human learning and behaviour. Operant behaviour is behaviour in which one operates in an environment. Within this model, the importance of stimuli is de-emphasised. Skinner stressing Thorndike's Law of

Effect, demonstrated the importance of those events that follow a response. According to Skinner, the events or stimuli – the reinforcers – that follow a response and that tend to strengthen behaviour or increase the probability of a recurrence of that response constitutes a powerful force in the control of human behaviour. If we wish to control behaviour, say to teach someone something, we ought to carefully attend to the reinforcers. Skinner believed that, in keeping with the above principle, punishment works to the disadvantage of both the person who is punished and the punishing agency (Skinner, 1953). Skinner felt that in the long run, punishment does not actually eliminate behaviour, but that mild punishment may be necessary for temporary suspension of an undesired response, although no punishment of such kind should be meted out without positively reinforcing alternate responses.

Skinner's theories had an impact on the understanding of human learning and education. His book "The Technology of Teaching" was a classic in the field of programmed instruction. Programmed instruction had its impact on second language learning though it was limited to very specialized subsets of language. A Skinnerian view of both language and language learning methodology dominated foreign language teaching methods for several decades (for example the audio-lingual method).

Behaviourist and neo-behaviourist theories claim that human behaviour can be predicted and controlled. Other learning theories suggest that human behaviour is essentially abstract in nature and is composed of such complex of variables that behaviour simply cannot be predicted or easily controlled. Two of

these theories are Ausubel's Meaningful Learning Theory and Carl Rogers' Humanistic Psychology.

Ausubel (1968) contends that learning takes place in the human organism through a meaningful process of relating new events or items to the already existing cognitive concepts or propositions that is, hanging new items on existing cognitive pegs. The cognitive theory of learning put forward by Ausubel (1968) is best understood by contrasting rote and meaningful learning. Rote learning is the process of acquiring materials as "discrete and relatively isolated entities that can be related to cognitive structure only in an arbitrary and verbatim fashion, not permitting the establishment of meaningful relationships" (1968 : 108). Therefore, rote learning involves the mental storage of items, having little or no association with existing cognitive structure. In meaningful learning, as new material enters the cognitive field, it interacts with, and is appropriately subsumed under a more inclusive conceptual system. Any learning situation can be meaningful if (1) learners have a meaningful learning set, that is, a disposition to relate the new learning task to what they already know and (2) the learning task itself is potentially meaningful to the learners - that can be related to the learners' structure of knowledge.

Ausubel's theory of learning has important implications for second language learning and teaching. Too much rote activity at the expense of meaningful communication in language classes could stifle the learning process. Subsumption theory provides a strong theoretical basis for the rejection of conditioning model of practice and repetition in language teaching. In second



language learning, mindless repetition, imitation and other rote practices in the language classroom have no place. The audio-lingual method which is widely used and accepted method of teaching foreign language is based on the behaviouristic theory of conditioning that relies heavily on rote learning.

Rogers' (1983) Humanistic Psychology have had an impact on the understanding of learning, particularly learning in an educational or pedagogical context. Rogers studied the "whole person" not as a physical and cognitive, but primarily emotional being. His formal principles of human behaviour focussed on the development of an individual's self-concept and of his or her personal sense of reality; those internal forces that causes a person to act. Rogers felt that inherent in principles of behaviour is the ability of human beings to adapt and to grow in the direction that enhances their existence. Rogers' position has important implications for education. The focus is away from teaching and towards learning. The goal of education is the facilitation of change and learning. Learning how to learn is more important than being taught something from the superior vantage point of the teacher who unilaterally decides what shall be taught. What is needed according to Rogers, is real facilitation of learning, and one can only facilitate by establishing an interpersonal relationship with the learner. Teachers, to be facilitators, must first of all be real and genuine, discarding masks of superiority and omniscience. Second, teachers need to have genuine trust, acceptance and the pricing of the student as a worthy valuable individual. Thirdly, teachers need to communicate openly and empathetically with their students and vice versa. Rogers' humanistic approach differs from that of

Skinner and Ausubel. Rogers is not as concerned about the actual cognitive process of learning as the latter. He feels that if the context of learning is properly created, then human being will learn everything they need to. The flaw in Rogers' theory is that teachers may take the non-directive approach too far to the point that valuable time is lost in the process of allowing students to discover facts and principles for themselves. Also, a non-threatening environment may become so non-threatening that the facilitative tension needed for learning is removed.

In adapting Rogers' (1983) ideas to language teaching and learning, we need to see to it that learners understand themselves and communicate this self to others freely and non-defensively. Teachers as facilitators must therefore, provide the nurturing context for learning and not see their role as one of programmedly feeding students quantities of knowledge that they purportedly need to devour.

Theories of learning do not capture all the possible elements of general principles of learning (Brown, 1993). Beyond the four language theories discussed above, there are various taxonomies of types of learning and other mental processes universal to all. Gagne (1965), has identified a number of types of learning which all human beings use. Types of learning vary according to the context and subject matter to be learned. According to Brown (1993), a complex task such as language learning involves every one of Gagne's types of learning, from simple signal learning, to problem solving. Gagne (1965:58-59) identified eight types of learning:

1. Signal learning. The individual learns to make a general diffuse response to a signal. This is the classical conditioned response of Pavlov.
2. Stimulus response learning. The learner acquires a precise response to a discriminated stimulus. What is learned is a connection or in Skinnerian terms, a discriminated operant, sometimes called an instrumental response.
3. Chaining. What is acquired is a chain of two or more stimulus-response connections. The conditions for such learning have also been described by Skinner.
4. Verbal association. Verbal association is the learning of chains that are verbal. Basically, the conditions resemble those for other motor chains. However, the presence of language in the human being makes this a special type because internal links may be selected from the individual's previously learned repertoire of language.
5. Multiple discrimination. The individual learns to make a number of different identifying responses to many different stimuli, which may resemble each other in physical appearance to a greater or lesser degree. Although the learning of each stimulus-response connection is a simple occurrence, the connections tend to interfere with one another.
6. Concept learning. The learner acquires the ability to make a common response to a class of stimuli, even though the individual members of that class, may differ widely from one another. The learner is able to make a response, that identifies an entire class of objects or events.

7. Principle learning. In its simplest terms, a principle is a chain of two or more concepts. It functions to organize behaviour and experience. In Ausubel's terminology, a principle is a "subsumer" – a cluster of related concepts.
8. Problem-solving. Problem solving is a kind of learning that requires the internal events usually referred to as thinking. Previously acquired principles and concepts are combined in a conscious focus on an unresolved or ambiguous set of events.

Gagne's first five types of learning fit easily into the behaviouristic framework while the last three can be explained by Ausubel's or Rogers' theories of learning. Since these eight types of learning have been found to be relevant to second language learning, the implication is that certain lower level aspects of second language learning may be more adequately treated by behaviouristic approaches and methods while the higher order types of learning are more effectively taught by methods derived from a cognitive approach to learning.

The second language learning process can be categorised and sequenced in cognitive terms by means of the eight types of learning. Signal learning generally occurs in the total language process. People make a general response of some kind (emotional, cognitive, verbal or non-verbal) to language. Stimulus-response learning is evident in the acquisition of sound system of a foreign language in which, through a process of conditioning and trial and error, the learner makes closer and closer approximations to native-like pronunciation. Chaining is evident in the acquisition of phonological sequences and syntactic patterns - the stringing together of several responses. The fourth type of learning

involves Gagne's distinction between verbal and non-verbal chains. Multiple discriminations are necessary in second language learning where a word has to take on several meanings or a rule in the native language is reshaped to fit a second language context. Concept learning includes the notion that language and cognition are inter-related and also the rules of syntax, rules of conversation are linguistic concepts that have to be acquired. Principle learning is the extension of concept learning to the formation of linguistic system. Finally, problem solving is clearly evident in second language learning as the learner is continually faced with a set of events that are true problems to be solved. Solutions to the problems involve the creative interaction of all eight types of learning as the learner "sifts and weighs previous information and knowledge in order to correctly determine the meaning of a word, the interpretation of an utterance, the rule that governs a common class of linguistic items, or a conversationally appropriate response" (Brown, 1993:89).

In addition to the theories of learning and types of learning, there are other factors that have been found to influence second language learning. Among these are transfer, interference and overgeneralisation from the first language, the affective variables that influence learning and individual differences in the way learners learn.

In the literature on second language learning processes, three terms are used very frequently. They are transfer, interference and overgeneralization. These are not different processes but several manifestations of one principle of

learning - the interaction of previously learned material with a present learning event.

Transfer describes the carryover of previous performance or knowledge to subsequent learning. Positive transfer occurs when prior knowledge benefits the learning task, that is, when a previous item is correctly applied to present subject matter. Negative transfer occurs when the previous performance disrupts the performance on a second task. This is referred to as interference. Here the previously learned material is incorrectly transferred or associated with an item to be learned. This has been the topic of extensive research by Cummins (1991). Cummins believes that in the course of learning one language, a child acquires a set of skills and implicit meta-linguistic knowledge that can be drawn upon when working in another languages.

The common underlying language proficiency (CULP) is shown in Figure 2.1 on the next page. CULP (also referred to as CULP in Figure 2.1) provides the base for the development of both first language (L1) and second language (L2). It follows that any expansion of CULP that takes place in one language will have a beneficial effect on the other language. This theory also serves to explain why it becomes easier and easier to learn additional language. It is therefore, important to remember that the native language of a second language learner is often positively transferred and that the learner benefits from the facilitating effects of the first language.

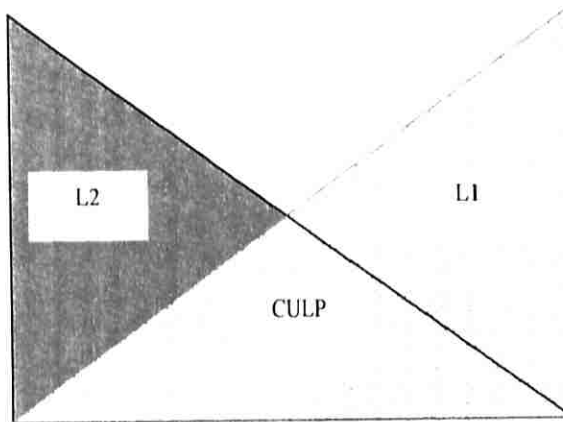


Figure 2.1: Common Underlying Language Proficiency (Cummins, 1991)

Another term which is used almost as often as interference is overgeneralisation. Overgeneralisation is a subset of generalisation. Generalisation is a crucial strategy in learning. To generalise means to infer or derive a law, rule or conclusion, from observation of particular instances. Generalisation is in fact Ausubel's meaningful learning where items are subsumed under high-order categories for meaningful retention. Overgeneralisation on the other hand is a process that occurs as the second language learner acts within the target language, generalising a particular rule or item in the second language - irrespective of the native language - beyond legitimate bounds (for example overgeneralising irregular past tense ending such as 'fled' instead of 'flew').

## Theories of Second Language Acquisition

Second language acquisition (SLA) is a subset of general language learning. According to Brown (1993), SLA involves cognitive variations, is closely related to one's individual characteristics, is interwoven with second culture learning, involves interference and the creation of new linguistic systems as well as the learning of discourse and communicative functions of language. Just as in the theories of human learning, there is no unified theory of second language acquisition. Likewise, there are several competing theories and models to explain second language acquisition. The subsequent section will discuss a few of these theories and models.

One of the most controversial hypothesis put forward on second language learning is that by Krashen (1977, 1981, 1982 and 1985) in a range of articles and books. Krashen's hypothesis has different names. Among them are the Monitor Model, Acquisition-Learning Hypothesis and more recently the Input Hypothesis. In the Monitor Model, Krashen claims that adult second language learners use two means of internalising the target language. The first is 'acquisition', a subconscious and intuitive process of constructing the system of a language, similar to the process used by a child to 'pick up' a language. The second means is a conscious learning process, in which learners attend to form, figure out rules and are generally aware of their own processes. The 'monitor' is an aspect of the second process: it is a device for watching one's output, for editing and making alterations or corrections as they are consciously perceived. Krashen claims that fluency in second language performance is due to what we



have acquired, not what we have learned (1981:99). Adults should therefore do as much acquiring as possible in order to achieve communicative fluency; otherwise they will be preoccupied with rule learning and pay too much conscious attention to forms of language and to watch their own progress. According to Krashen (1982), our conscious learning processes and our subconscious learning processes are mutually exclusive: learning cannot become acquisition. With no interface between acquisition and learning, he recommends large doses of acquisition activity in the classroom with only a very minor role for the monitor. Once fluency is established, only then should an optimal amount of monitoring or editing be employed by the learner (Krashen, 1981).

The input hypotheses which is an offshoot of the monitor theory, claims that an important "condition for language acquisition is that the acquirer understands (via hearing or reading) input language that contains structure 'a bit beyond' his or her current level of competence." If an acquirer is at stage or level  $i$ , the input he or she understands should contain  $i+1$  (1981:100). In other words, the language which the learners are exposed to, should be just far enough beyond their current competence so that they can understand most of it but still be challenged to make progress. An important part of the Input Hypothesis is Krashen's recommendation that speaking not to be taught directly or very soon in the language classroom. Speech will emerge once the acquirer has built up enough comprehensible input ( $i+1$ ). Krashen further claims that the best

acquisition will occur in environments where anxiety is low and defensiveness absent or in Krashen's terms where "affective filter" is low.

Krashen's second language acquisition has been disputed by McLaughlin (1978), Gregg (1984), White (1987) and Brumfit (1992). McLaughlin (1990:627) comments:

My own bias . . . is to avoid the use of the term conscious and unconscious in second language theory. I believe that these terms are too laden with surplus meaning and too difficult to define empirically to be useful theoretically. Hence, my critique of Krashen's distinction between learning and acquisition - a distinction that assumes that it is possible to differentiate what is conscious from what is unconscious.

He continues by noting that the literature in experimental psychology indicates that there is no long term learning without awareness. This observation has been confirmed by Schmidt (1990), for second language learning in particular. This means that no input becomes intake without conscious awareness.

A second criticism of Krashen's view arose out of the claim that there is no interface (or overlap) between acquisition and learning. This is because dichotomies in human behaviour always define end points of a continuum and not mutually exclusive categories. Second language learning involves varying degrees of learning and acquisition, depending on the learner's own styles and strategies. Long (1988), Ellis (1990), Doughty (1991) and Buczowska and Weist (1991) have all shown in a number of empirical research studies that instruction in conscious rule learning can indeed aid in the attainment of successful communicative competence in a second language.

A third difficulty in Krashen's Input Hypothesis is found in his explicit claim (1986:62) that "comprehensible input is the only causative variable in second language acquisition." In other words success in a foreign language can be attributed to input alone. Such a theory ascribes little credit to learners and their own active engagement in the pursuit of language competency as shown in Table 2.1.

Table 2.1: Possible Second Language Performance as a Function of Information Processing Procedures and Attention to Formal Properties of Language

Attention to Formal Properties of Language	Information Processing	
	Controlled	Automatic
Focal	Cell A Performance based on formal rule learning	Cell B Performance in a test situation
Peripheral	Cell C Performance based on implicit learning or analogic learning	Cell D Performance in Communication situations

(McLaughlin *et. al.*, 1983)

McLaughlin, Rossman and McLeod (1983) have proposed another model for understanding second language acquisition which avoids any direct appeal to a consciousness continuum. This model called the Attention-Processing Model juxtaposes processing mechanisms (controlled and automatic) and categories of attention to form four cells (see Table 2.1). Controlled processes

have limited capacity and are temporary while automatic processes are relatively permanent. Controlled processes can be regarded as anyone learning new skills, in which only a few elements of the skills are retained. Automatic processes refer to processing in a more accomplished skill where the brain can manage a lot of information simultaneously. The automatising of this multiple data is accomplished by a process of restructuring (McLeod and McLaughlin, 1986) in which the components of the task are coordinated, integrated, or reorganised into new units, thereby allowing the old components to be replaced by more efficient procedure (McLaughlin, 1990). Restructuring is conceptually synonymous with Ausubel's construct of subsumption discussed in the theories of learning.

Both ends of this continuum can occur with either focal or peripheral attention to the task at hand, that is, focusing attention either centrally or simply on the periphery. While most controlled processes are focal, some like the child first language learning or the learning of skills without instruction can be peripheral. Similarly, most automatic processes are peripheral, but some can be focal as in the case of a learner taking a test. In the context of second language learning, the four cells describe a person's processing of and attention to language forms (grammatical, phonological, discourse rules and categories, lexical choices etc.).

Table 2.2: Practical Applications of McLaughlin's Attention Processing Model

Attention to Formal Properties of Language	Information Processing	
	Controlled: New skill, capacity limited	Automatic: Well-trained, practical skill, capacity is relatively unlimited
Focal Intentional attention	<b>Cell A</b> <ul style="list-style-type: none"> <li>Grammatical explanation of a specific point</li> <li>Word definition</li> <li>Copy a written model</li> <li>The first stage of memorizing a dialog</li> <li>Prefabricated patterns</li> <li>Various discrete-point exercise</li> </ul>	<b>Cell B</b> <ul style="list-style-type: none"> <li>"Keeping an eye out" for something</li> <li>Advanced L2 learner focusses on modals, clause formation etc.</li> <li>Monitoring oneself while talking or writing</li> <li>Scanning</li> <li>Editing, peer-editing</li> </ul>
Peripheral Incidental attention	<b>Cell C</b> <ul style="list-style-type: none"> <li>Simple greetings</li> <li>The later stages of "memorising" a dialog</li> <li>TPR / Natural approach</li> <li>New L2 learner successfully completes a brief conversation</li> </ul>	<b>Cell D</b> <ul style="list-style-type: none"> <li>Open-ended group work</li> <li>Rapid reading, skimming</li> <li>Free writes</li> <li>Normal conversational exchanges of some length.</li> </ul>

(Brown, 1994)

Table 2.2 shows a more practical application of McLaughlin's Attention Processing Model. According to this model, most adult second language learning of language forms in the classroom involves a movement from cell A through a combination of C and B to D.

Bialystok's (1978) Analysis / Automaticity Model is yet another means of conceptualising second language learning. At the heart of her model, is a distinction between implicit and explicit linguistic knowledge. In the explicit category are the facts that a person knows about language and the ability to articulate those facts in some way. Implicit knowledge is information that is automatically and spontaneously used in language tasks. Processes are universal while strategies are optional and vary across individuals. The responses a person makes to another person upon receiving some sort of linguistic message can be either spontaneous or time-delayed.

In 1982, Bialystok modified her framework for conceptualising second language acquisition. The modification consisted of hypothesising a two dimensional framework in which analysis and automaticity can interact. In her first factor analysis, mental representation can either be unanalysed or analysed. Unanalysed knowledge is the general form in which we know most things without being aware of the structure of that knowledge (Bialystok, 1982). On the other hand, learners are overtly aware of the structure of the analysed knowledge. An example of unanalysed knowledge extreme of this knowledge dimension is that learners have little awareness of language rules but at the analysed end, learners can verbalise complex rules governing language.

The distinction between automatic and non-automatic processing refers to the relative access the learner has to the knowledge, irrespective of the degree of analysis. Knowledge that can be retrieved easily and quickly is automatic. Knowledge that takes time and effort to retrieve is non-automatic. However,

Bialystok's model was criticised for stretching information processing models beyond their limits, "thus giving the explanation a false air" (Hulstijn, 1990:42).

One of the most heated current debates on second language acquisition theory, centres on the extent to which the variability manifested in the interlanguage competence of learners can be systematically explained. One of the main areas of interlanguage research in recent years has focused on the variation that arises from the disparity between classroom contexts and natural situations outside language classes. Researchers such as Ellis (1990) have examined instructed second language acquisition and found that instruction makes a difference in learner's success rates and also that the classroom context itself explains a great deal of variability in language learning.

Debate on the theory of second language learning continues with new theories being continuously proposed by researchers. Brown (1994), says that if we were to try to unify or to integrate everything that every second language researcher concluded, we cannot do this through doubting attitude towards these theories. By balancing one's perspective with a believing attitude towards the elements that are not categorically ruled out in these theories and models, one can maintain a sense of perspective. Schumann (1982) suggests that we look at the 'art' of second language acquisition. In this way the different views of second language acquisition can co-exist as two different paintings of the language learning experience-as reality symbolised in two different ways. According to him such a view reduces the need for closure and allows us to see the research on

second language acquisition in a larger perspective with less dogmatism and ego involvement.

### Socio-psychological Factors that Influence Second Language Learning

Theories of second language acquisition that are based on cognitive considerations would be omitting the most fundamental aspects of human behaviour - the affective domain. Hilgard (1963: 267) noted that "purely cognitive strategies of learning will be rejected unless a role is assigned to affectivity." The affective domain is the emotional side of human behaviour.

A large number of variables are implied in considering the emotional side of human behaviour in the second language process. Among these are age, socio-psychological factors (such as motivation, attitude, parents, peers, learning situations, teachers and ethnicity), personality factors (self-esteem, extraversion, anxiety, risk-taking, empathy, inhibition and tolerance of ambiguity), learning style and learning strategies.

#### Age

Several studies have been carried out to determine whether the age at which someone is first exposed to a second language in the classroom or naturalistically comes into contact with the target language affects acquisition of that language in any way. In the studies by Krashen, Long and Scarcella (1979), some fairly clear patterns emerged that older is faster while younger is better. Those who start at a young age are able to achieve accent-free native-like



performance in the language. However, older children learn faster than younger children.

### Instrumental and Integrative Motivation

Gardner and Lambert (1972), extensively studied second language learners to determine how motivational factors affect language learning success. They found two different clusters of attitudes divided two basic types of motivation: instrumental and integrative motivation. Instrumental motivation refers to motivation to acquire a language as means for attaining instrumental goals, furthering a career, reading technical materials, translation and so on. An integrative motive is employed when learners wish to integrate themselves within the culture of the second language, to identify themselves with and become part of that society. Many of Lambert's studies (1963, 1967, 1972) found that integrative motivation generally accompanied higher scores on proficiency tests in a foreign language. The conclusion from these studies was that integrative motivation may be an important requirement for successful second language learning. This was challenged by Lukmani (1972) who demonstrated that among Marathi-speaking Indian students learning English in India, those with higher instrumental motivation scored higher in tests of English proficiency.

### Attitudes

Attitudes, like all aspects of the development of cognition and affect in human beings, develop early in childhood and are the results of parents' and

peers' attitudes, as well as contact with people who are different in any number of ways. These attitudes form a part of one's perception of self, of others, and of the culture in which one is living. Oller, Baca and Alfredo (1978) conducted several large-scale studies of the relationship of Chinese, Japanese and Mexican students' achievement in English to their attitudes towards self, the native language group, the target language group, and their reasons for learning English. They found that for most part, positive attitude towards self, the native language and the target language enhanced proficiency.

Several studies have investigated parental role in how attitudes towards speakers of the target language are developed. Gardner (1960) showed that students learning French as a second language in Montreal possessed attitudes which are reflective of their parents. Similarly, Stern (1967) reported that children's success in Welsh-medium schools was directly related to parents attitudes towards the Welsh language.

The attitudes of peers too can affect learners' acquisition of a second language. Elias-Olivares (1976) relates how second-generation Mexican-Americans prefer to use *calo* dialect or code-switch rather than use the standard Spanish they were learning in their bilingual classroom.

Brown (1983) found that the learners' attitudes towards the learning situation affected their degree of success. Schumann and Schumann (1977), in a review of diary studies found that learners can hold negative attitudes towards the learning situation if the teacher's agenda is very different from the learners'.

Sometimes this negativity becomes severe enough that learners abandon language study altogether.

Teacher's attitudes towards learners can also affect the quality and quantity of the learning, which takes place. In fact, Tucker and Lambert (1973) consider teacher's attitudes even more important than parental or community-wide attitudes in influencing the outcome of second language learning.

### Ethnicity

Beebe's (1977) work has demonstrated that the ethnicity of a second language learner's listener will have effect on the learner's speech performance. Beebe found that Thai spoken by the ethnic Chinese sounded more Chinese when they were speaking to an ethnic Chinese than when they speaking to an ethnic Thai. Giles's Social Accommodation Theory offers an explanation for this phenomenon. According to this theory, speech shifts occur in conversation, resulting either in convergence in which speakers modify their speech to become more similar to their listeners (Giles and Smith, 1979) or in divergence through which linguistic differences are maintained or emphasized between the speakers. These findings suggest that there would be greater success when students study in multi-ethnic settings as compared to single ethnic groups.

### Self-esteem

Self-esteem is among the most pervasive aspects of any human behaviour. People derive their sense of self-esteem from the accumulation of

experiences with themselves and with others and from assessment of the external world around them. Shavelson, Hubner and Stanton (1976) proposed a tertiary hierarchy to account for self-esteem. At the highest level is the global self-esteem or the individual's overall self-assessment. At the medium level is specific self-esteem or how individuals perceive themselves in various life contexts (example, education, work). At the lowest level is the evaluation one gives oneself on specific tasks. Heyde (1979) studied the effects of the three levels of self-esteem on performance of an oral production task by American college students learning French as a foreign language. She found that all three levels of self-esteem correlated positively with performance on the oral production measure with the highest correlation occurring between task, self-esteem and performance on oral production measures. Watkins, Biggs and Murari (1991) included measures of self-esteem in their studies of success on language learning. The results revealed that self-esteem appears to be an important variable in second language acquisition.

### Inhibition

Guiora, Beit-Hallahmi, Brannon, Dull and Scovel (1972) produced one of the few studies on inhibition in relation to second language learning. Guiora *et al.* designed an experiment using small quantities of alcohol to induce temporary states of less than normal inhibition in an experimental group of subjects. The performance on a pronunciation test in Thai among subjects of the experimental group was significantly better than the performance of a control group. Guiora *et al.*

*al.* concluded that there was a direct relationship between inhibition and pronunciation ability in a second language. Stevick (1976) refers to language learning as involving a number of forms of alienation, alienation between the "critical me" and the "performing me", between "my native culture" and "my target culture", between "me and my teacher", between "me and my fellow students". This alienation arises from the defenses that we build around ourselves. These defenses do not facilitate learning; rather, they inhibit learning and their removal therefore can promote language learning, which involves self-exposure to a degree manifested in few other endeavours.

### Risk-taking

According to Rubin and Thomson (1982), one of the prominent characteristics of good language learners is the ability to make intelligent guesses. Impulsivity has also been found to have positive effect on language success. These factors suggest that risk-taking is an important characteristic of successful learning of a second language. Learners have to be able to 'gamble' a bit to be willing to try out hunches about the language and bear the risk of being wrong. Beebe (1983), found that persons with high motivation to achieve are moderate, not high risk-takers. These individuals like to be in control and like to depend on skill. Beebe (1983) found that fossilization or the relatively permanent incorporation of certain patterns of error, may be due to lack of willingness to take risks. It is 'safe' to stay within patterns that accomplish the desired function even though there may be some errors in those patterns.

## Anxiety

Three components of foreign language anxiety has been identified Horwitz, Horwitz and Cope 1986; Macintyre and Gardner, 1991). These are (1) communication apprehension, arising from the learners' inability to adequately express mature thoughts and ideas, (2) fear of negative social evaluation arising from a learner's need to make positive social impression on others and (3) test anxiety or apprehension over academic evaluation. Studies by Macintyre and Gardner (1991) concluded that foreign language anxiety can be distinguished from other types of anxiety and that it can have negative effect on the language learning process.

## Empathy

Communication requires a high degree of empathy. In order to communicate effectively you need to be able to understand the other person's affective and cognitive states. Guiora *et. al.* (1972) found that empathy successfully predicted authenticity of pronunciation of foreign language. Hogan (1969) found significant correlation between empathy and language success.

## Tolerance for Ambiguity

Another factor that has been found to influence second language learning is tolerance for ambiguity. Naiman, Frohlich and Todesco (1978) reported significant correlation between students' tolerance for ambiguity and their scores on the listening comprehension task.

The review of literature above shows that age, socio-cultural and personality variables can have a bearing on second language acquisition and should be considered in ESL learning situations.

### Learning Styles and Strategies

Theories of learning, Gagne's types of learning and transfer processes, personality and socio-cultural factors are all attempts to describe universal human traits in learning. They seek to explain globally how people perceive, filter, store and recall information and how personality and socio-cultural factors influence these processes.

Such processes do not account for the differences across individuals in the way they learn items or differences within any one individual. While we all exhibit inherently human traits of learning, every individual approaches a problem or learns a set of facts from a unique perspective. This study focusses on the cognitive variations in learning a second language: variations in learning styles that differ across individuals and in strategies employed by individuals to deal with problems in particular contexts.

### Learning Styles

The literature on education suggests that students who are actively engaged in the learning process are more likely to achieve success (Dewar, 1996; Hartman, 1995; Leadership Project, 1995). Once students are actively

engaged in their own learning process, they begin to feel empowered and their personal achievement and self-direction levels rise.

Robotham (1999) says that in considering learning and how to improve student learning, one needs to understand the way(s) in which an individual learns. It is widely accepted that while it is possible to identify common elements of learning, the learning process varies at individual level. According to Robotham (1999), students develop a way or style of learning and refine that style in response to three groups of factors: unconscious personal intervention by the individual, conscious intervention by the learners themselves and interventions by some other external agent/s.

Learning style is therefore, the learner's preferred mode of dealing with new information. Lawrence (1984) indicates that the term learning style is used loosely in educational research to encompass four learner traits. They are (a) cognitive style, that is, preferred or habitual patterns of mental functioning (b) patterns of attitudes or interests that influence a person's attention in a learning situation (c) a disposition to seek learning environments compatible with one's cognitive style, attitudes and interests and to avoid incompatible learning environments and (d) a disposition to use certain learning tools (learning strategies) and avoidance of others. This comprehensive definition of learning style thus spills over into the affective domain and helps predict learning strategy choice.

Willing (1988) defines learning style as an inherent pervasive set of characteristics related to how learners prefer to learn or to deal with new



information. The term learning style first appeared in the 1970's. Riding and Cheema (1991) suggest that the appearance of this term was a replacement term for cognitive style, because cognitive style was only part of an individual's learning style. According to Willing (1988), cognitive style theoretically skirts the issues of interests, attitudes and motivation - the affective elements that are necessarily influential in the broader construct of learning style. The term learning style therefore reflects an interest in the totality of the processes undertaken during learning (Robotham, 1999). According to Keefe and Ferrell, 1990:16), learning style is:

" A complexus of related characteristics in which the whole is greater than its parts. Learning style is a gestalt combining internal and external operations derived from the individual's neurobiology, personality and development, and reflected in learner behaviour."

Scarcella (1990) describes learning style as "cognitive and interactional patterns which affect the way in which students perceive, remember, and think" (p.114) while Ehrman and Oxford, 1990:311) refer to it as "preferred or habitual patterns of mental functioning and dealing with new information." In summing up, Robotham (1999) says learning style, therefore, relates to the general tendency towards a particular learning approach displayed by an individual.

According to Brown (1993), learning style mediates between emotion and cognition. For example a reflective style invariably grows out of a reflective personality or a reflective mood. An impulsive style on the other hand usually arises out of an impulsive emotional state. People's styles are determined by the way they internalise their total environment, and since that internalisation process

is not strictly cognitive, we find that physical, affective and cognitive domains merge in learning styles. Some researchers (like Keefe, 1987), claim that styles are stable traits in adults. This is a questionable view. The perception of many is that individuals show general tendencies towards one style or another (Reid, 1987).

A key factor to getting and keeping students actively involved in learning lies in understanding learning style preferences, which can positively or negatively influence a student's performance (Birkey and Rodman, 1995; Dewar, 1996; Hartman, 1995). It has also been shown that adjusting teaching materials to meet the needs of a variety of learning styles benefits all students (Agogino and Hsi, 1995). According to Schroeder (1996), the 'typical' student learning style profile is changing on colleges today and there is much greater variation in the range of learning style preferences to be considered. It is therefore important to understand what learning style preferences are, and how to address them when preparing learning materials for adult students. Birkey and Rodman (1995), point out that there are striking differences in the way people learn and process information and that there are significant differences in how learning styles are defined and measured. Therefore, one of the most important things for an instructor is to be aware that there are diverse learning styles in the student population.

The review of literature on learning styles has revealed that there are many theories of learning styles and the number is still growing. If we were to try to enumerate all the learning styles that educators and psychologists have

identified, a very long list will emerge. Ausubel (1968:171) identified at least 18 different styles. Hill (1972) defined some 29 different factors that make up the cognitive-style map of a learner; these include just about every imaginable sensory, communicative, cultural, affective, cognitive and intellectual factor. Dunn, Dunn and Price (1989) reviewed a number of styles relating to the teaching-learning process in general, and to second language learning in particular.

In an attempt to provide a framework for the growing number of different learning style theories, Curry (1987) conceived the "onion model", consisting of four layers, defined as follows:

- Personality dimensions which assess the influences of basic personality on preferred approaches to acquiring and integrating information. Models stressing personality include Witkin's (1977) construct of field dependence / field independence, and the Myers-Briggs Type Indicator (Myers, 1978) with dichotomous scales measuring extroversion versus introversion, sensing versus intuition, thinking versus feeling, and judging versus perception.
- Information-processing which is the individual's preferred intellectual approach to assimilating information, and includes Schmeck's (1983) construct of cognitive complexity and Kolb's (1984) model of information processing.

- Social interaction, which addresses how students interact in the classroom and includes Reichmann and Grasha's (1974) types of learners: independent, dependent, collaborative, competitive, participant, and avoidant.
- Multidimensional and instructional preference which address the individual's preferred environment for learning and encompass the Human Information Processing Model (Keefe, 1989) and Learning Style Model of Dunn and Dunn (1978).

These models are similar because they stress the importance of identifying and addressing individual differences in the learning process. However, there are important differences among the models in that some models stress accommodation of individual style preferences while others stress flexibility and adaptation. There is also a range of quality among the assessment instruments that operationalise the various models and lack of research base for some of the models.

Reid (1995) who has carried out extensive research on learning style, especially on perceptual learning styles, has proposed another categorisation of the learning style models. Reid (1995) defines leaning style as "an individual's natural, habitual and preferred way(s) of absorbing, processing and retaining new information and skills says that these learning styles persist, regardless of teaching methods and content areas." (1995: viii). In accordance with her definition, Reid (1995) divides learning style research into three major categories: cognitive learning styles, sensory learning styles and personality learning styles.

Cognitive learning styles include (i) Field-Independent / Field-Dependent Learning Styles (Witkin, Moore, Goodenough and Cox, 1977) (ii) Analytical / Global Learning Styles (Scarcella, 1990) (iii) Reflective / Impulsive Learning Styles (Kagan and Messer, 1975) and (iv) Kolb Experiential Learning Model (1976).

The field-independent learner learns more effectively step by step, or sequentially, beginning with analysing facts and proceeding to ideas (sees the trees instead of the forest). The field-dependent learner learns more effectively in context, holistically, intuitively and is especially sensitive to human relationships and interactions (sees the forests instead of the trees). The analytical learner learns more effectively individually, prefers setting own goals and responds to a sequential, linear, step by step presentation of materials while the global learner learns more effectively through concrete experience and through interaction with other people. A reflective learner learns more effectively when he or she has time to consider options before responding (true for language learners) while impulsive learner learns more effectively when he or she is able to respond immediately and to take risks.

Kolb (1976) claims that there are two ways people approach learning situations: the way in which they perceive material from the outside world (by sensing / feeling or by thinking) and the way in which they process that materials (by active / doing or by reflective / watching). Kolb (1976) used the distinctions within these two dimensions - perception and process - to divide all learners into 4 main learning styles:

perceive materials	{ by sensing / feeling { or { by thinking
Process material	{ active / doing { or { reflective / watching

Kolb (1976) thought of these learning styles as a continuum that one moves over time but in reality people usually come to prefer and rely on one style above the others.

Reid's (1990) second category of learning styles research is based on sensory learning styles. This includes the perceptual learning styles, environmental learning styles and sociological styles. The perceptual learning style learners include the auditory learner (learns more effectively through hearing), visual learner (learns more effectively through seeing), tactile learner (learns more effectively through touch or hands-on), kinesthetic learner (learns more effectively through complete body experience or whole body movement). Some researchers combine the tactile and kinesthetic learner and call them haptic. The haptic learner learns more effectively through touch and whole-body movement. The environmental learning styles include the physical learner and sociological learner. The physical learner learns more effectively when such variables as temperature, sound, light, food, mobility, time and classroom / study arrangements are considered. The sociological learner learns more effectively when such variables as group, individual, pair and team work, or level of teacher authority are considered.

Reid's third category of learning styles research is based on affective / temperament or personality learning styles. This category is similar to Myers-Briggs' categorization of temperament styles, tolerance for ambiguity styles and right and left-hemisphere learners.

In the Myers-Briggs' temperament styles, there are four groups of learners. These are extraversion-introversion, sensing-perception, thinking-feeling and judging-perceiving. In the extraversion-introversion group, there is the extraverted learner who learns more effectively through concrete experience, contacts with the outside world and relationships with others and the introverted learner who learns more effectively in individual, independent situations which involve ideas and concepts. In the sensing-perception group, the sensing learner learns more effectively from reports of observable facts and happenings, prefers physical sense-based input while the perception learner learns more effectively from meaningful experiences and from relationships with others. In the thinking-feeling group, the thinking learner learns more effectively from impersonal circumstances and logical consequences while the feeling learner learns more effectively from personalised circumstances and social values. In the judging-perceiving group, the judging learner learns more effectively by reflection, analysis and processes that involve closure while perceiving learner learns more effectively through negotiation, feeling, and inductive processes that postpone closure.

In the tolerance for ambiguity styles, there are two groups of learners. The ambiguity-tolerant learner who learns more effectively when opportunities for

experiment and risk as well as interaction are present, and the ambiguity-intolerant learner who learns more effectively when in less flexible, less risky, more structured situations. Among the right and left-hemisphere learners, the left-brained learners tend toward visual, analytic, reflective, self-reliant learning while the right-brained learner tends towards auditory, global / relational, impulsive, interactive learning.

It is interesting to note that both Curry and Reid have categorised learning styles in the same way as those found in the Myers-Briggs' model (as regards the personality dimensions) and the Kolb's model (as regards information processing) as is cited in Curry, 1987.

Litzinger and Osif (1993:73) describe learning styles as "the different ways in which children and adults think and learn." They say that each of us develops a preferred and consistent set of behaviours or approaches to learning. They break down learning styles into several processes:

- cognition – how one acquires knowledge
- conceptualisation – how one processes information
- affective – people's motivation, decision-making styles, values and emotional preferences which also help to define their learning styles.

Gardner's Multiple Intelligence (1983) is another way of looking at learning styles (Winters, 1995; Wang, 1996). The concept of Multiple Intelligence can be summarised as follows:

- Verbal / Linguistic : ability with and sensitivity to oral and written words



- Logical / Mathematical : ability to use numbers effectively and to respond well
- Visual / Spatial : sensitivity to form, space, colours, lines and shapes
- Musical : sensitivity to rhythm, pitch and melody
- Body / Kinesthetic : ability to use the body to express ideas and feelings
- Interpersonal : ability to understand another person's moods and intentions
- Intrapersonal : ability to understand oneself - one's own strengths and weaknesses
- Naturalistic : ability to make distinction in the natural world, to understand systems and define categories

He later included Naturalistic Intelligence in 1998 and a year later, he further extended and included the Intelligence Gustatory / Olfactory.

According to Winters (1995) and Wang (1996), a learner uses some of these styles when learning but tends to prefer a small number of methods over the rest. Dunn and Dunn (1993) state that although some pioneers identified learning style as only one of two variables on a bipolar continuum (Debello, 1990), style is a combination of many biological and experientially imposed characteristics that contribute to learning, each in its own way and all together as a unit. According to Dunn and Dunn (1993), learning style is more than merely whether a person remembers new and difficult information most easily by hearing, seeing, reading, writing, illustrating, verbalizing or actively experiencing; perceptual or modality strength is only part of learning style. It is more than whether a person processes information sequentially, analytically, or in a 'left-brain' mode rather than holistic, simultaneous, global 'right-brain' fashion: that is

only one component of learning style. It is more of how someone responds to the environment in which learning must occur or whether information is absorbed concretely or abstractly: these variables contribute to style but again are only part of the total construct. According to Dunn and Dunn (1993), we must not only look at the apparent symptoms, we need to examine the whole of each person's inclinations toward learning.

Learning style then, according to Dunn and Dunn (1993) is the way in which each learner begins to concentrate on, process, and retain new and difficult information. That interaction occurs differently for everyone. To identify a person's learning style pattern, it is necessary to examine each individual's multi-dimensional characteristics to determine what is most likely to trigger each student's concentration, maintain it, respond to his or her natural processing style, and cause long-term memory. To reveal that, it is necessary to use a comprehensive model of learning style, because individuals are affected by different elements of style, and so many of the elements are capable of increasing academic achievements for those to whom they are important.

The Dunn and Dunn learning style model has a great deal of history and research behind it. It was developed by Dr. Rita Dunn in 1967 and since that time research has been conducted at more than ninety institutions of higher education. The model traces its roots to two distinct learning theories: cognitive style theory and Brain Lateralisation Theory. The cognitive style theory is based on the idea that individuals process information differently on the basis of either learned or inherent traits. Brain lateralisation theory is based on the idea that the

two hemispheres of the brain have different functions: left-brain has verbal-sequential abilities while right-brain has emotion-spatial holistic processing. The model incorporates certain premises:

- Everyone has strengths, but different people have different strengths;
- Most individuals can learn;
- Instructional environments, resources, and approaches respond to diversified strengths;
- Individual's instructional preferences exist and can be measured reliably;
- Given responsive environments, students attain statistically higher achievement and aptitude test scores in matched, rather than mismatched treatments;
- Most teachers can learn to use learning styles as a cornerstone of their instruction;
- Many students can learn to capitalise on their learning style strengths.

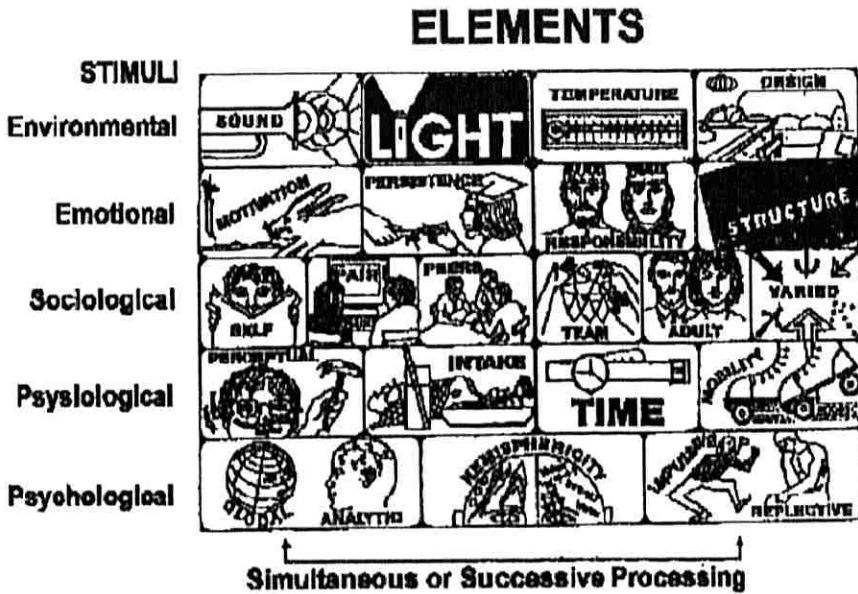


Figure 2.2 - The Dunn and Dunn Learning Style Model (1979)

The Dunn and Dunn Model comprises 21 elements which, when classified, reveals that learners are affected by their (1) immediate environment (sound, light, temperature, and furniture / seating design); (2) own emotionality (motivation, persistence, responsibility {conformity versus non-conformity}, and need for externally imposed structure or the opportunity to do things their own way); (3) sociological preference (learning best alone, in a pair, in a small group, as part of a team, or with either an authoritative or collegial adult; and wanting variety as opposed to patterns and routines); (4) physiological characteristics (perceptual strengths, time-of-day energy levels, and need for intake and / or mobility while learning); and (5) their processing inclinations (global / analytical, right/left, and impulsive/reflective). The Dunn and Dunn Learning Style Model is shown in Figure 2.2.

From the review of the different models of learning styles, it can be seen that learning style is not a single construct. It has been conceptualised differently by different researchers based on their own definition of what constitutes learning style. It is therefore very important that when determining learning styles, that we specify the model that we are referring to and use the appropriate instrument.

The focus of this study is the perceptual learning style preferences in the context of ESL learning. Perceptual learning style in this study uses the definition as in Reid's (1987) study. Therefore, when we talk of perceptual learning style, we are referring to the learning style that comprises the sensory channels of visual, auditory, tactile and kinesthetic modes of learning and the sociological style of individual and group learning. The rationale for choosing the perceptual learning style from among the different models is because it is most easily applied to regular classroom situations where the teaching learning situations require the learners to use their sensory channels to process information. It also seems to be the most appropriate model for research on language learning because language is received and transmitted primarily through the sensory channels that is, the eyes, ears and hands. When learning a language, the ears, eyes and hands are all actively involved. Language learning involves receiving and sending cues for communication. In addition to the sensory channels, the inclusion of individual or group learning style is again reflective of formal classroom situations where the students have to either work individually or in groups.

## Research Studies on Perceptual Learning Style Preferences

Perception refers to the manner in which the senses receive and extract information from the environment (Cherry, 1981). "Perception becomes the core process in the acquisition of cognitive knowledge" (Forgus, 1966:2). Gagne (1977), considers the most important aspect of the learner to be his or her senses, the central nervous system and muscles. Gagne reasons that before information can be learned, it must be taken in by the senses. The act of perception gives meaning to the environmental stimulus and results in sensation. Through linkages established with past experiences and familiar events, new information can be stored in short or long-term memory (Barbe, Swassing and Milone, 1979; Gagne, 1977). The learner receives and organises information through his or her preferred sensory channels.

Researchers of learning styles refer to the sensory channels through which perception occurs as modalities: Auditory (hearing), visual (seeing), tactile (hands-on) and kinesthetic (whole-body movement). The sensory channels through which each individual best absorbs and retains new information and skills have become known as 'modality strengths' (Kinsella, 1994). Heredity, maturity, age and culture are all factors that determine most dominant and well defined modalities (Barbe and Milone, 1980). According to Messick and Associates (1976), perceptions provide the basis for "understanding experience, through the mind's hand or the mind's eye or the mind's ear . . ." (1976: 21). For second language learner, perceptions are the key to verbal and visual cues of a new system of communication.

An overview of perceptual learning style research does not provide a coherent picture of the perceptual learning style dominance in either children or adults. One possible cause for the varied results has been attributed to inconsistencies in measurement techniques (Cherry, 1981). Some researchers have focussed on assessment of perceptual strengths by using instruments that measure the dominant modalities actually used by the subject to complete a series of designated tasks (Barbe *et al.*, 1979; Cherry, 1981; Galbraith and James, 1984). Others have used self-reporting surveys and inventories to determine the learner's preferred styles (Dunn and Dunn, 1979; Farr, 1971; Keefe, 1987; Reid, 1987; Reinert, 1976).

A second possibility for the variations in the research findings may be attributed to lack of agreement on the terminology used to define the perceptual channels which are being measured (Cherry, 1981). For example, the print medium might be included as part of visual learning or measured as a separate entity. Similarly, the term auditory learning sometimes indicates verbal interactions while at other times, it refers to the aural channels alone. Confusion has also developed around the interchangeable use of the classifications haptic (the entire hand) and tactile (the fingertips). Finally, a probable source of research inconsistencies is the marked variance that exists in perceptual learning styles from one individual to another and from one age group to another (Galbraith and James, 1984; Messick *et al.*, 1976).

Some controversy exists as to whether or not learners can identify their learning styles. Cherry (1981) showed a slightly negative correlation between

self-assessed learning style preferences and learning style strengths tested by using the Multi-Modal Paired Associates Learning Test II. However, the significance of these findings was hampered by the fact that each group had individual subjects, who did not share the group strength, and the learning style variations, in general, which are seen in all populations. In addition, years of formal education as well as knowledge of learning style concepts, contributed to positive correlations between perceptual learning style strength and preference in Cherry's study. Evidence is also presented on the side of those who maintain that learning style preferences are predictable. Dunn (1984) showed that most students identify their learning style strengths especially if the style is strongly preferred or rejected. Farr (1971), who tested college students in two modalities, auditory and visual, showed that "individuals were able to predict successfully the modalities in which they would demonstrate superior learning performance" (1971:126). In light of the conflicting opinions on the accuracy of learning style self-assessments, the background of the students needs to be considered when choosing an appropriate instrument.

Research on native speakers of English has produced diverse results in terms of perceptual learning style strengths and preferences. Barbe and Milone (1981), in a comprehensive study of the perceptual learning style strengths of 1000 elementary and high school students, showed that overall 30% of the subjects relied on the visual modality, 25% on the auditory, 15% on the kinesthetic and the remaining 30% on a combination of modalities. Focusing on learning style preferences, Dunn and Dunn (1979) found that 20 – 30% of



school-age children are auditory learners, 40% are visual and the remaining 30 - 40% are tactile / kinesthetic, visual / tactile or of some other combination. In contrast, Keefe (1987) noted that children are primarily tactile and kinesthetic learners who evolve into visual and auditory learners as they grow older. Similarly, Price, Dunn and Saunders (1981) found that young children are the most tactile/kinesthetic and that there is a gradual shift toward the visual throughout their elementary grades. It is only in the fifth grade onwards, that young children begin to show auditory learning characteristics.

Studies of adults have also produced conflicting findings. Galbraith and James (1984) used the Multi-Modal Paired Associates Learning Test II (MMPALT II) refined by Cherry (1981) to identify the perceptual modality strengths of 316 adults ranging from 20 – 25 years and above. The elements studied were print (written form), aural. Interactive (group discussions), visual (pictorial form), haptic, kinesthetic and olfactory (smell). Rankings of the perceptual learning strengths of the subjects from the 20 – 40 years of age were (1) visual, (2) haptic, (3) interactive, (4) aural, (5) print, (6) kinesthetic and (7) olfactory. In the group aged 50 and above, the pattern was similar with interactive taking second place, aural third place and haptic fourth. In a study of 96 adults who were also tested with the MMPALT II, Cherry (1981) discovered the visual element to be the most dominant perceptual strength and kinesthetic element to be the most dominant preference. Adults are able to use more than one perceptual modality in processing information. However, and particularly in stressful situations, adults

rely on the most dominant perceptual modality (Barbe *et al.*, 1979; Messick *et al.*, 1976).

Research efforts into the perceptual learning preferences of second language learners are in the preliminary stages. Noting the general lack of comprehensive research on adult learning styles, Brookfield (1986), drew attention to the absence of studies on groups that are not part of the mainstream in the United States, such as native Americans, Hispanics and Asians. Any research that does exist is fragmented and concentrates on aspects of cognition not related to perceptual learning styles. However, even the scattered findings showed that culture plays an important role in determining how a learner processes information (Gonzales and Roll, 1985; Lee, 1976; Lesser, Fifer and Clark, 1985; Ramirez and Castaneda, 1974).

Brown (1980) defined culture as that which refers to the "ideas, customs, skills, art and tools which characterise a group of people in a given period of time (1980:123). Cultural patterns provide a context for the development of cognitive and affective behaviours. Witkin (1977) demonstrated the importance of social structure in determining field dependence and independence. Witkin further showed that pastoral, sedentary groups in need of social skills for close living arrangements are field dependent, while migratory hunting groups in need of analytical skills in homogeneous surroundings are field independent. Lesser *et al.* (1965) conducted a study of six and seven-year-old Chinese and Jewish children and reported that ethnic group identity, and not social class was associated with their verbal, abstract, numerical and spatial abilities. Regardless

of social class ties, the Chinese children had stronger spatial abilities while the Jewish children showed stronger verbal abilities. Ramirez and Castanada (1974) attributed the differences in cognitive styles to differences in socialisation practices. Because of the emphasis on respect for family and authority figures, Mexican American children are more field sensitive while Anglo-American children are brought up in families that are more field sensitive. Anglo-American children who are brought up in families that stress less autonomy and more independence are thus more field independent.

A few studies touch on the perceptual aspects of cognitive learning styles and their relations to cultural influences. Bennet (1979) observed that many Black and minority children come from oral traditions, and therefore learn better through an auditory presentation of material. Dorian (1985) tested Iranian and Alaskan students in their native countries and found the majority to be visual learners. Lee (1976) noted that Asian societies emphasised visual learning largely as a result of the visual memory needed to learn language systems, such as Korean and Japanese, 10 – 50% of which included Chinese logograms. Tactile learning is also a key aspect of the learning process of Asians who trace forms with the index finger until the word becomes functional.

A study conducted by Reid (1987) identified culture as one of the determinants of perceptual learning style. Reid's study explored foreign and American students attending universities in the United States. Reid (1987) used the Perceptual Learning Style Preference Questionnaire (PLSP). This questionnaire measures six learning style preferences: visual, auditory,

kinesthetic, tactile, group and individual. This is a self-report questionnaire based on existing learning style instruments and adapted to a limited English speaking population. The description of the different learning style preferences are as follows:

- Students with visual major learning style preference learn well from seeing words in books, on the chalkboard and in workbooks. They remember and understand information and instructions better if they read them. They do not need as much oral explanation as an auditory learner, and can often learn alone with a book. They take lecture notes and oral instruction if they want to remember the information.
- Students with auditory major learning style preference learn from hearing words spoken and from oral explanations. They may remember information by reading aloud or by moving their lips as they read, especially when they are learning new materials. They benefit from hearing audiotapes, lectures, and class discussion. They benefit from listening to tapes, and by conversing with their teacher.
- Students with kinesthetic learning style preference learn best through experience, by being involved physically in classroom experiences. They remember information well when they actively participate in activities, field trips, and role plays in the classroom. A combination of stimuli, for example, an audiotape combined with an activity help them understand new material.

- Students with tactile major learning style preference learn best when they have the opportunity to do "hands-on" experiences with materials, that is, working on experiments in a laboratory, handling and building models, and touching and working with materials which provide them with the most successful learning situations, Writing notes or instructions can help them remember information, and physical involvement in classroom activities may help them understand new information.
- Students with group major learning style preference learn more easily when they study with at least one other student, and are more successful competing and work well with others. They value interaction and class work with other students, and remember information better when they work with two or three classmates. The stimulation they receive from group work helps them learn and understand new information.
- Students with Individual major learning style preference learn best when they work alone. They think better when they study alone, and they remember information they learn by themselves. They understand material best when they learn it alone and make better progress in learning when they work by themselves.
- Minor learning style preference indicates areas where the student can function well as a learner. Usually, a very successful learner can learn in several different ways, and so he / she might want to experiment with ways to practise and strengthen his /her minor learning style.

- Negligible or negative learning style indicates that the learner may have difficulty in learning in that way.

Reid (1987) surveyed 1234 intermediate and advanced level students participating in 39 university affiliated intensive English programs in addition to 154 native speakers of English in Colorado State University. A total of 98 countries and 52 language backgrounds were represented in Reid's study (see Table 2.3 on the next page). In comparisons made among different ethnic groups including Americans, Reid (1987) demonstrated that perceptual learning style preferences categorised as visual, auditory, kinesthetic, tactile, individual and group varied significantly.

Reid's findings demonstrated that in general, the non-native speakers in the study, who included Arabic, Spanish, Japanese, Malay, Chinese, Korean, Thai and Indonesian students had a strong preference for kinesthetic and tactile learning. While the majority of the students showed a negative preference for group, the Malay students showed minor preference for group learning style. Korean students emerged as the most visual while Japanese students were the least auditory in their perceptual preferences.

Native speakers of English were considerably less tactile in their preferences than non-native speakers and demonstrated a preference for auditory and kinesthetic learning. This finding conflicted with the visual dominance of adults in the studies referred to earlier (Lee, 1976).

Table 2.3  
Perceptual Learning Style Preference Results

Language	Learning Style Preferences		
	Major	Minor	Negative
Arabic	Visual Auditory Kinesthetic Tactile	Group Individual	None
Spanish	Kinesthetic Tactile	Visual Auditory Individual	Group
Japanese	None	Visual Auditory Kinesthetic Tactile Individual	Group
Malay	Kinesthetic Tactile	Visual Auditory Group Individual	None
Chinese	Visual Auditory Kinesthetic Tactile	Individual	Group
Korean	Visual Auditory Kinesthetic Tactile	Individual	Group
Thai	Kinesthetic Tactile	Visual Auditory Individual	Group
Indonesian	Auditory Kinesthetic	Visual Tactile Individual	Group
English	Auditory Kinesthetic	Visual Tactile Individual	Group

Reid (1987)

Table 2.4  
Learning Style Preference Means and Native Language

Language	Learning Styles					
	Auditory	Visual	Tactile	Kinesthetic	Individual	Group
Spanish	++	+	++	++	+	++
Chinese	+	+++	++	++	+	++
Vietnamese	+	+++	+++	+++	-	+++
Laotian	+	++	+++	+++	+	++
Other	++	++	+++	+++	+	++
Total	++	++	+++	+++	+	++

Major Learning Style    +++ = Very strong preference    ++ = Strong preference  
                                      + = Minor learning Style                - = Negative learning style

(Rossi-Le, 1989)

Rossi-Le (1989) replicated Reid's study on ESL students using the Perceptual Learning Preference Questionnaire. The subjects in Rossi-Le's study were migrant ESL students residing in the United States and from the following linguistic backgrounds: Chinese, Laotian, Vietnamese, Spanish, Cambodian, Japanese, Polish and Korea. The findings of the research showed that the majority of the students expressed a major learning style preference for tactile and kinesthetic modes: these learning styles involve practical experiential approach to learning (see Table 2.4). In addition, all language groups indicated a learning preference for group learning but they indicated a minor (or negative) learning style preference for individual learning. The results showed that adult immigrant second language learners prefer a style of learning that involve them in the totality of the language learning experience (tactile and kinesthetic) and in



collaborative work. Therefore, they may benefit from realistic contact and interactive behaviour as a basis for language development.

Acculturation, which is the process through which individuals adjust to and assimilate key aspects of the host culture, emerges as an important determinant in the learning style preferences that students exhibit. Reid (1987) touches on the issue indirectly in her deliberations on the English proficiency levels of her subjects and the length of time which they spent in the United States. The students who were more proficient showed learning style preferences more closely related to native speakers of English as did those students who had lived in the United States the longest, in this case three years or more. Reid suggests that learning style preferences can be modified. On a more general level, changes in the learning styles of underdeveloped countries have been noted as they become more Westernised (Wagner, Messick and Spratt, 1978; Halverson, 1979) pointed out that students can learn to be bicultural as they go through the process of acculturation. Brown (1980) indicated that for successful learning to take place, there needs to be synchronisation between language development and the process of acculturation.

In an effort to further demonstrate through longitudinal study, the relationship between cultural background and perceptual learning style preferences, Stebbins (1993) replicated and expanded on Reid's pioneer study. Stebbins' study included 63 countries and 43 language backgrounds. The findings showed that the ESL students showed a learning preference for tactile and kinesthetic learning and a negative preference for group learning. The

relationship between language background and dominant perceptual learning style shows that the learner's native language background had an effect on his or her perceptual learning style preference. This supports Reid's (1987) study.

The studies carried out by Reid (1987), Rossi-Le (1989) and Stebbins (1993) were carried out on migrant ESL students residing in the United States. The respondents studied were ESL students living in a country where English is the native language of the people. Reid's study hinted there was a strong possibility that the ESL students had gone through the process of acculturation and are influenced by the learning styles of the native speakers.

In order to determine the extent of truth, Melton (1990) carried out a study to determine the Perceptual Learning Style Preferences of ESL students residing in their motherland where English is not spoken as the native language of the people. He carried out a study using the same questionnaire on 331 ESL students in the People's Republic of China. The results showed that the Chinese students preferred kinesthetic, tactile and individual learning as their major learning styles. Another research on perceptual learning styles by Cheng and Banya (1998), on 140 male freshman cadets at the Chinese Military Academy and 35 teachers showed that both students and teachers preferred auditory, tactile and individual learning styles.

Reid (1998), with the help of Fullbright lecturers from three universities in Egypt carried out a survey of 100 EFL teachers-in-training. A big majority of Egyptian students strongly preferred kinesthetic and tactile learning styles. These results were very similar to that for Arab students in her earlier study (Reid,

1987). One major difference was that while the auditory learning style was strongly preferred by the Arab students in the earlier study, this modality style was primarily a minor learning style for the Egyptian students. Reid (1998) suggests that the reason could be due to the Egyptian students having very limited access to spoken English outside the classroom.

Goodson (1993), in Reid, 1998, surveyed 227 East Asian students studying English at the University of Tennessee. In general, the students preferred visual and kinesthetic style learning. More specifically, mainland Chinese and Taiwanese students preferred visual learning. The Japanese students preferred kinesthetic learning, and the Korean students preferred tactile and visual learning. Most of the East Asian students indicated that they would not choose group learning.

Vicioso (1993), in Reid, 1998, administered the Perceptual Learning Style Preference Questionnaire to 193 secondary school students. He found that while students in both his and Reid's original research strongly preferred kinesthetic learning style, Vicioso's students ranked tactile learning at about the same level as all other major learning styles, dramatically lower than their ranking of kinesthetic learning. Vicioso (1993) explains that students may have lower tactile preferences because they lack experience with tactile techniques in their educational background. Another difference found by him was the nearly equal preference for group and individual major learning. According to Vicioso (1993), the students really preferred group learning. The individual preference might

have come from first year students because they did not know each other and so would rather do things alone.

Gedeon and Takacs (1992), in Reid, 1998, administered the PLPS to 138 Hungarian university students whose major fields were as shown in Table 2.5.

Table 2.5  
Respondents for the Perceptual Learning Style Preference Survey of Hungarian Students

Subjects	Number of Students
English	42
Science(Physics, Mathematics, Biology, Chemistry)	51
Engineering	16
Computer Science	10
Business	15

The Hungarian students chose kinesthetic and tactile as their major learning style preferences, as well as multiple learning styles. In addition, these EFL teachers-in-training identified auditory training as their first choice as a minor learning preference and in a departure from Reid's (1987) study, a substantial number chose group learning as a learning style. (Gedeon and Takacs, 1992), in Reid, 1998, also found that the longer students studied English, the more auditory their preference became, a result that paralleled Reid's 1987 study. The researchers suggest the possible reason that auditory learning style preference has to be developed by the students, especially when learning English as a second or foreign language. In learning a second language, listening and communicating play an extremely important part, and modern communicative methods lay a

special emphasis on developing those skills. This may induce students who want to be successful to accommodate their learning style preference accordingly.

In Russia, Korotkikh, in Reid, 1998, who trains EFL (English as a Foreign Language) undergraduate major and minors in the Foreign Language Department in Barnaul Pedagogical State Institute in Siberia administered the PLSP to 193 students. Most were 20 to 23 years old, and most had had 10 - 15 years of EFL study. Nearly two thirds of the teachers-in-preparation were women. The results showed that the strongest learning style choices were tactile and kinesthetic. They also demonstrated preference for multiple learning styles. Group learning was the most common negative learning style. Though Reid's 1987 study did not analyse students from Eastern Europe, the results of Korotkikh showed several similarities to that of Reid's work.

In conclusion, the findings of Reid's study and subsequent studies do have common features. The results obtained after administering the Perceptual Learning Style Preferences Questionnaire show that tactile and kinesthetic styles do appear to feature as the main learning styles of ESL students.

#### Other Factors that Influence Perceptual Learning Style Preferences

Additional key factors have been found to contribute towards the formation of learning style preferences. They are age, educational level, level of English proficiency, field of study or subject matter, gender, beliefs, attitudes and motivation, prior knowledge of learning styles, context, the education system of

the country and the teacher's teaching style (Dunn and Dunn, 1979; Oxford and Erham, 1995; Reid, 1987).

In terms of age, the learning style preferences of older students were more clearly delineated with visual and auditory modalities being the strongest (Reid, 1987). Other studies have also identified visual dominance among adult learners (Cherry, 1981; Galbraith and James, 1984; Keefe, 1987; Price, Dunn and Saunders 1981 and Rossi-Le, 1989).). The research of Barbe and Milone (1981) illustrates shifts that occur in learning style preferences as individuals mature and develop. In the primary years, the perceptual learning style strengths are more well defined with the dominant one being auditory. From the first through the sixth grades, visual and kinesthetic preferences come to dominate, while high school age students and adults show more visual and auditory dominance. According to researchers, the shift represents a change in the environment as students learn to read (visual) and write (kinesthetic). Each individualised perceptual strength becomes more varied, giving student flexibility in his or her approach to the instructional material.

In the aspect regarding the relationship between education and perceptual learning style dominance is sketchy in Reid's study as well as earlier studies. Reid reports that graduate students had a greater preference for visual learning than undergraduates. The educational background and academic experiences of the students in their native countries were not specified; the learning environment and educational level of the students in the United States were fairly homogeneous. Therefore, influences on perceptual preferences could not be

inferred. Other studies have shown that previous educational experiences have an effect on the cognitive styles and classroom behaviours of students from other cultures (Politzer and McGroarty, 1985). In addition, studies of adult learners who are native speakers of English show that more highly educated adults self-select their learning preferences with greater accuracy (Cherry, 1981) and that their mean scores in all the dominant learning modes are higher (Galbraith and James, 1984). Jacobs (1990) used several learning style instruments with African-American secondary school students and found that learning styles correlated with achievement levels. High achievers demonstrated preference for structured classrooms and had multiple learning styles.

Rossi-Le (1989) found that students with higher language proficiency had preference for visual learning style. These findings corroborated the results of earlier research studies with both American and foreign students (Cherry, 1981; Galbraith and James, 1984; Keefe, 1987). Studies of US students disclose a shift toward the visual mode as individuals matured and learnt to read (Keefe, 1987, Price, Dunn and Saunders, 1981). The more proficient ESL learner has probably had more exposure to the written word, and therefore, feels comfortable learning visually (Rossi-Le, 1989). Rossi-Le (1989) also found a relationship between kinesthetic learning style preference and the subject's language proficiency and work history. The more proficient students preferred learning through interactive methods and direct experiences with the language. Similarly, those who had worked in the United States for a period of time expressed preference for kinesthetic learning style, possibly because they were accustomed to the work

environment that provided more experiential basis for learning than did the classroom.

Cheng and Banya (1992) found that students who preferred kinesthetic learning style had more confidence as well as more positive attitudes and beliefs about foreign language learning than students with other perceptual learning style preferences.

Education system of a country can influence the learning style of the students. Different education systems value different learning styles. In the US colleges and universities, successful students are often outspoken, independent individuals who think analytically, react objectively and accurately, use trial and error methods of learning. Effective students often participate in the class discussions, articulate and support individual opinions. Other cultures value different learning characteristics. Many Asian classroom teachers find class participation uncourteous. Individualism sometimes labelled creativity, which is prized by the US educational system, contravenes the harmony and collective wisdom so highly valued by Asian educators (Condon, 1984). Many cultures such as the Hispanic value cooperation rather than competition.

Dr. Rita Dunn and a number of colleagues (Dunn and Griggs, 1988, 1995; Dunn, Dunn and Price, 1989) found gender differences in learning styles. They found that males need more physical mobility than females in the classroom which means that they would learn better with tactile or kinesthetic learning style. Halpern (1996), in Woolfolk, 1998, found that females excel in reading, comprehension, production of written and oral language whereas mechanical



and visual information processing are often accomplished either more accurately or more quickly by males.

Gender differences have often been found for field-independence / field dependence through different measures. Field-independence refers to ability to separate the key details from an ambiguous context easily through the use of analysis. Research with people of all ages suggests that field-independent people are less sensitive to the social context, are more detached and more logical than field-dependent people. They also prefer more structured and analytical form of learning (Oxford, 1990a). In contrast, field-dependence is the lesser ability to separate details from the background easily and greater tendency toward forming global impressions. Field-dependent people tend to be more sensitive to the social context, are perceived as more outgoing and more considerate than their field-independent peers. Field-independence and field-dependence can be linked to gender. Males are usually more field-independent and females are more field-dependent (Good and Brophy, 1986; Shipman and Shipman, 1985). Field independent learners, often males do have the advantage in language achievement that is related to written language achievement and grammar-based (analytical) language learning strategies. Analytical field-independent learners often select logic-based learning strategies, such as deductive reasoning (Oxford and Lavine, 1991).

Field-sensitive individuals, often females with their more interpersonal and global orientation, might do better in less analytic aspects of overall communicative competence (Oxford and Lavine, 1991). Gender differences have

also been found in reflection and impulsivity. Reflection is defined as the tendency to stop and consider options before responding, often resulting in greater accuracy while impulsivity is the tendency to respond immediately, more fluently and more inaccurately. Research by Shipman and Shipman (1985) and Belenky, Clinchy, Goldberge and Tarule (1986) have found that females are usually more reflective and males are more impulsive. In foreign language area, the "perceiver" on the Myers-Briggs Type Indicator or MBTI (Myers and McCulley, 1990) - those learners who could refrain from leaping to conclusions too rapidly and who might therefore, be called reflective learners were better at learning languages than the "judgers" – those who needed quick closure (Ehrman and Oxford, 1989; 1990). In terms of perceptual learning style, females were found to be auditory, preferring to converse, discuss and do group work. Males on the other hand were tactile (preferring manipulating objects) and kinesthetic (preferring total body movements) (Oxford, 1993).

Reid (1987) found that subject matter can have influence on learning style. She found that ESL students from specific major fields often preferred specific learning styles (for example Engineering students preferred tactile learning and students from the hard sciences preferred visual learning).

The influence of attitudes in language learning has been researched by Brown (1987) and Oxford and Ehrman (1989). Brown (1987) says that the affective side of the learner is probably one of the biggest influence on language. Self-esteem is one of the primary affective elements. It is self-judgment of worth or value based on one's own feeling of efficacy-a sense of interacting effectively

with one's own environment. The sense of efficacy that underlies self-esteem is reflected in attitudes (mental disposition, beliefs or opinions) which influence a the learner's motivation to keep on trying to learn. According to Brown (1987) attitudes are strong predictors of motivation in any area of life and especially in language learning. Litzinger and Osif (1993) say that attitude and motivation can define learning styles. This observation appears reasonable in the context of perceptual learning styles. Since attitudes are a characteristic of affective learners and the learning styles that can evoke feelings and emotions tend to be visual, auditory and kinesthetic and group styles, then these would be the preferred learning styles of those who have positive attitudes towards ESL.

Cornett (1983) and Marshall (1991) have found teacher's style to have a great impact on the learning style preference of their students. For many ESL students, teaching effectiveness has to a great extent been based upon efficient delivery of information rather than active minds at work. Students who have completed the bulk of their formative schooling in a traditional learning forum will require a compelling rationale and meticulous preparation for a successful transition to a model of teaching and learning that invites students to become "active generators of their own knowledge" (Cummins, 1989) and to work together to maximise each other's achievement (Johnson, Johnson and Holubec, 1994). In the Malaysian context and especially in ESL, majority of the students belonging to the same cohort as the respondents would have studied English under the New Primary School Curriculum (KBSR) and the Integrated Secondary School Curriculum (KBSM). The focus of these two curricula is the use of second

language for communication. Therefore, the recommended teaching methodology which was adopted by ESL teachers emphasised speaking and listening skills, role play, working with models and group work. Therefore, for most of these students the familiar learning styles are auditory, kinesthetic, tactile and group.

### Research Studies on Matching Learning Styles and Instructional Styles

One of the applications of knowledge concerning learning style is in the area of education. If one were able to diagnose the learning style of an individual, then it would seem logical to assume that matching the characteristics of instruction to that style would make the instruction more effective. Students tend to enter a learning situation with a style of learning already developed. If they meet a learning environment at variance with a style, then it is likely the student will reject the learning environment (Kolb, 1976). In a later study, Kolb (1984) concluded that there were potential long term benefits where there was an intentional mismatch between learning style and instructional style, on the grounds that:

The aim is to make the student self-renewing and self-directed; to focus on integrative development where the person is highly developed in each of the four learning modes; active, reflective, abstract and concrete. Here, the student is taught to experience the tension and conflict among these orientations, for it is from these tensions that creativity springs (p.125).

Table 2.6

Research Studies on the Match-Mismatch between Learning Styles and Learning Strategies

Learning Is More Effective Where there is A Match	Learning is More Effective Where There is a Mismatch
Di Stefano (1970)	Gehlman (1951)
Koran <i>et. al.</i> (1971)	Glass (1967)
Grieve and Davies (1971)	Coop and Brown (1971)
James (1973)	Anderson (1972)
Carpenter <i>et. al.</i> (1976)	Nelson (1972)
McCleod and Adams (1977)	Mongomery (1972)
Witkin (1977)	Thornell (1974)
Hudak (1985)	Gorton (1975)
Canino and Cockerill (1988)	Kolb (1985)

(Adapted from Witkins *et al.*, 1977 and Hayes and Allinson, 1996)

It is clear from the research literature available that there remains much debate over the effectiveness of matching learning style and instructional style (see Table 2.6). Matthews(1991:253) argues that:

While mismatching is appropriate for developmental reasons, students have more positive attitudes towards school and achieve more knowledge and skills when taught, counseled or advised through their natural or primary style rather than a style that is secondary or undeveloped, particularly when adjusting to a novel and new situation that creates stress such as beginning experiences in higher education.

An expanding body of research affirms that teaching and counseling students with interventions that are congruent with the students' learning-style

preferences result in their increased academic achievement and more positive attitudes towards learning (Dunn, Deckinger, Wither and Katzenstein, 1990).

#### Research Studies on Matching Teaching Styles with Preferred Environmental Learning Styles

Different students have different environmental needs when learning. Although many students require a quiet environment while concentrating on difficult information, others learn better with sound than without (Pizzo, 1981). Similarly, although many people concentrate better in brightly illuminated rooms, others think better in soft light than bright light. Fluorescent light over stimulates certain learners and causes hyperactivity and restlessness (Dunn, Krimsky, Murray and Quinn, 1985). Table 2.7 below shows some experimental results concerned with matching teaching styles with instructional environment preferred by students. In majority of the cases, when there was a match between teaching style and learning style there was significant improvement in academic achievement.

Research demonstrates that when students' sociological preferences were identified and they were subsequently exposed to multiple treatments – both congruent and incongruent with their identified learning styles – each achieved higher test scores when taught in congruent patterns (Dunn, Beaudry and Klavas, 1989).

Table 2.7  
Experimental Research Concerned with Instructional Environment

No.	Researcher/ Date	Sample	Subject Examined	Element Examined	Significant Achievement
1.	DeGregoris, 1986	6th, 7th, 8th graders	Reading comprehension	Kinds of sound needed	Significant positive findings(+)
2.	DellaValle, 1984	7th graders	Word recognition memory	Mobility/passivity needs	+
3.	Hodges, 1985	7th, 8th graders	Mathematics	Formal/informal design preferences	+
4.	Krimsky, 1982	4th graders	Reading speed and accuracy	Bright/low lighting preferences	+
5.	Lemmon, 1985	3rd –6th graders	Reading and mathematics	Design and time	+
6.	MacMurren, 1985	6th graders	Reading speed and accuracy	Need for intake while learning	+
7.	Miller, 1985	2nd graders	Reading	Mobility/passivity needs	+
8.	Murray, 1983	7th graders	Word recognition /memory	Temperature preference	0
9.	Nganwa- Baguma, 1986	High schoolers	English	Formal/informal design preferences	+
10.	Pizzo, 1982	6th graders	Reading	Acoustic preference	+
11.	Shea, 1983	9th graders	Reading	Formal/informal design preference	+
12.	Stiles, 1985	5th graders	Mathematics testing	Formal/informal design preferences	0

A Survey of Research on Learning Styles (in Dunn and Dunn, 1993)

#### Research Studies Concerned with Matching Teaching with Preferred Sociological Learning Styles

Four studies also examined the effects of sociological preferences on attitude towards learning and found statistically higher attitude scores when students were taught in matched situations (Debello, 1985; Dunn, Giannitti, Murray, Gedisert, Rossi and Quinn, 1990; Miles, 1987; Perrin, 1984. Giannitti

(1988), carried out a study with sixth, seventh and eighth graders. Students were taught through a mini-Contract Activity Package (CAP) and a small-group strategy. The results showed that peer-oriented students achieved higher test and attitude scores when learning through team learning than through mini-CAP. Those who preferred learning alone attained significantly higher test and attitude scores through the mini-CAP than with their peers.

Gifted students prefer to learn by themselves rather than with others (Cross, 1982; Griggs and Price, 1980; Price, Dunn, Dunn and Griggs, 1981). The research data were supported in schools throughout the United States. Adolescents achieved more, behaved better, and liked learning better when they were permitted to learn through their sociological preferences (Andrews, 1990; Dunn and Griggs, 1988; Lemmon, 1985; Harp and Orsak, 1990; Sinatra, 1990). Schools that have been experimenting with teaching students to teach themselves by capitalising on their sociological and other learning styles have found the results to be very promising (Griggs, 1990; Knapp, 1991).

#### Research Studies on Matching Teaching Styles with Preferred Perceptual Learning Styles

When students were introduced to new materials through their perceptual preferences, they remembered significantly more than when they were introduced through their least preferred modality (see Table 2.8). This was true for primary (Carbo, 1980; Urbschat, 1977; Wheeler, 1983), elementary (Hill, 1987; Weinberg, 1983) and secondary (Bauer, 1991; Martini, 1987) students, as well as for adults (Ingham, 1989).



Table 2.8

Experimental Research Concerned With Perceptual Learning Styles

No.	Researcher/ Date	Sample	Subject Examined	Perceptual Preference Examined	Significant Achievement
1.	Baure, 1991	Junior High School Under achievers	Mathematics	auditory, visual, tactual, kinesthetic	+
2.	Buell and Buell, 1987	Adults	Continuing education	auditory, visual, tactual	+
3.	Carbo, 1980	Kindergarteners	Vocabulary	auditory, visual, tactual	+
4.	Wheeler, 1980	Learning- disabled second graders	Reading	auditory, visual, tactual, sequenced	+
5.	Wheeler, 1983	Learning- disabled second graders	Reading	auditory, visual, tactual	+
6.	Jarsonback, 1984	Fourth grade underachievers	Mathematics	auditory, visual, tactual	+
7.	Martini, 1986	Seventh graders	Science	auditory, visual, tactual	+

A Survey of Research on Learning Styles (in Dunn and Dunn, 1993)

Both Restak (1979) and Thies (1979) ascertained that three-fifths of learning style is genetic; the remainder, apart from persistence, develops through experience. Individual responses to sound, light, temperature, seating arrangement, perceptual strengths, intake, time of day, and mobility are biological, whereas sociological preferences, motivation, responsibility and structure versus the need-for-providing-self-direction are thought to be developmental. The significant differences among the learning styles of students in diverse cultures tend to support this theory (Dunn, 1990; Dunn, Gemake, Jalali, Zenhausern, Quinn and Spiridakis, 1990; Dunn and Griggs, 1990; Sims,

1988). Within each culture, socioeconomic stratum and classroom, there are as many within-group differences as between groups.

Every person has a learning style pattern and every person has learning style strengths. People tend to learn more when taught with their own strengths than when taught with the teacher's strengths (Buell and Buell, 1987; Cafferty, 1980).

Messick (1984) and Strufert and Nogami (1989) found evidence that learners adapt their learning style based on perceptions of the requirements of a learning task. A contention supported by Talbort (1985), who suggests that learning style varies according to the learning task being undertaken, while Barris, Kielhofner and Bauer (1985) argue that it is possible for learning to change during the duration of a course of study.

Robotham (1999) argues that more important than the question of whether to seek a match or mismatch, is whether it is appropriate to consciously redesign an instructional strategy as learning style may not be temporally stable. According to him, research such as that by Barris, *et. al.* (1985) indicates that learning style is not a stable construct, so one may alter instructional style to meet a learning style that will itself change, requiring a further change in instructional strategy. This also assumes that instructional style is the only variable affecting learning style. Robotham (1999) says there are a number of factors affecting learning, so the choice of an appropriate learning style is very complex.

Robotham (1999) further argues that researchers have failed to address the question of how it is possible to achieve a tailoring of instructional approaches on any other than an individual level. It is unlikely that any single group of students would contain by chance, individuals who all have the same learning style, so one would need to organise sub-groups based on the learning of those in the groups. This placing of individuals into these groups would only be correct at a single point of time. Individuals within a group of supposedly the same learning style may change their learning style, and change at a different rate. Therefore, it would be impractical to change the instructional approach based on learning styles exhibited by individuals. He adds that the individuals may alter their learning style depending on the task they are faced with, making the previous group composition inappropriate.

What may be possible is to promote an educational environment developed for flexibility at the individual student level. This, according to Robotham (1999), requires a move away from the stimulus-response conditioning approaches, in which a passive learner is trained in a set of manner on defined situations. What is required is a stimulus-stimulus approach, where the student and the lecturer are actively involved in both learning and the mechanics of the learning process, the aim being to facilitate learner empowerment. Learners can then tailor flexible education strategies to their requirements to optimise the quality of the learning experience. The objective is to enable the learner to self-direct their own learning (Brookfield, 1985).

The ability of an individual to actively select from a personal style or skills portfolio, is part of what can be termed as self-directed learning. In an educational setting, a self-directed learner no longer operates as a passive receiver of information, but takes responsibility for the achievement of learning outcomes. The learner becomes capable of not only identifying what resources and skills are needed to achieve objectives, but also how to acquire these resources and skills. Under such an approach, higher education ceases to be simple something that is done to people. Instead, it becomes a platform from which individuals can go on to ineffect, educate themselves (Robotham, 1999). In order to become effective self-directed learners, students should be able to match their learning style with the appropriate learning strategy and also be able to select the appropriate strategy for a particular learning task.

#### Learning Strategies of ESL Students

Learning strategies are steps or actions taken by language learners to enhance any aspect of their language learning, accession, storage, retrieval and use of information (Rigney, 1978; Oxford, 1990). Brown (1993) defines strategies as those moment-by-moment techniques that we employ to solve problems posed by second language input and output.

Learning strategies have been defined as "any set of operations or shapes used by a learner that will facilitate the acquisition, storage, retrieval or use of information" (O'Malley *et. al.* 1985a). Learning strategies can be contrasted with instructional strategies which are the methods used by teachers to present information (Oxford, 1986a). Research has shown that strategies can be taught

and when applied, do improve achievement levels (O'Malley, Chamot and Stewner Manzanares, 1985b; Oxford, 1986 a & b; Weinstein, Schutte and Cascallar, 1984). Diverse research efforts into the learning strategies of second language learners have surfaced as part of the trend to identify individual differences among learners (Bialystok, 1979; Cohen, 1984; Hosenfeld, 1979; Naiman *et. al.*, 1975; O'Malley *et. al.*, 1985b; Oxford, 1986b; Rubin, 1975; Wenden, 1986).

Since the learner's self-selection of learning strategies often involves unconscious processes that cannot be objectively measured, there is little overall consensus as to the role of learning strategies in second language acquisition or as to the relationships that exist among identified strategies (O'Malley *et. al.*, 1985b). The approaches to learning strategy research have been varied. Beginning with the development of unvalidated lists derived from informal observations (Rubin, 1975; Stern, 1975), researchers have gradually employed more effective measures such as retrospective interviews (Naiman *et. al.*, 1975; O'Malley *et. al.* 1985b; Wenden, 1986) and introspective self-reporting surveys that require students to provide immediate oral feedback (Hosenfield, 1979; O'Malley, Chamot and Walker, (1987), to keep diaries (Rubin, 1981), or to complete structured questionnaires (Bialystok, 1981; Oxford, 1986b; Ramirez, 1986).

To date, the most structured and comprehensive instruments to be developed for determining learning strategies in ESL is the Strategy Inventory of Language Learning (SILL) by Oxford (1990b). The SILL is based on the system

of language learning strategies developed by Oxford (1986a). This strategy system links individual strategies as well as strategy groups with each of the four language skills i.e. listening, reading, speaking and writing. This strategy system is appropriate for studying the relationship between perceptual learning style in ESL with learning strategies because in the process of using the four language skills, learners would be displaying auditory, visual, kinesthetic, tactile, group or individual learning style. If the learner has a greater tendency for listening, he or she could have either auditory or group learning style as the preferred learning style depending on the situation. If a learner has a greater tendency for writing, he or she could have kinesthetic or tactile learning style as his or her preferred learning style. A preference for reading would indicate visual mode as the preferred learning style. A learner who likes speaking would display preference for kinesthetic or group learning style. A learner who likes to do these activities alone would be displaying a preference for individual learning style.

In this system, strategies are divided into two major classes: direct and indirect. These two classes are sub-divided into a total of six groups. The direct strategies are memory, cognitive and compensatory strategies. The indirect strategies are metacognitive, affective and social strategies. The direct and indirect strategies support each other, that is, each strategy group is capable of connecting with and assisting every other strategy group. Oxford (1990a) uses the analogy of a performer and director in explaining the relationship between direct and indirect strategies. The new language learner is like a performer in a stage play "working with language itself in a variety of specific tasks and

situations" (p. 14). The direct class is composed of memory strategies for remembering and retrieving new information, cognitive strategies for understanding and producing the language and compensation strategies for using language despite knowledge gaps. The performer works closely with the director. Oxford (1990) likens indirect strategies to the role of the director of the stage play. The class is made up of metacognitive strategies for coordinating the learning process, affective strategies for regulating emotions and social strategies for learning with others. The director serves several functions like focusing, organising, guiding, checking, correcting, coaching, encouraging and cheering the performer.

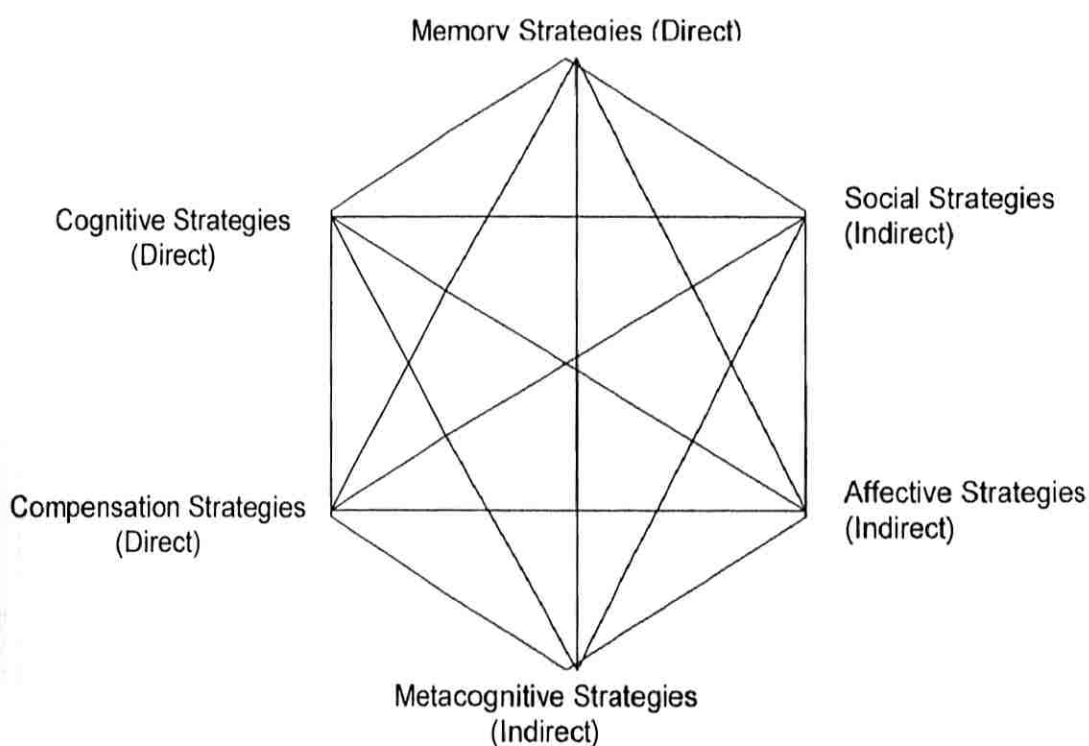


Figure 2.3: Inter-relationship between Direct and Indirect Strategies Among the Six Strategy Groups (Oxford, 1990a)

The director "is the internal guide and support for the performer. The functions of both the director and the performer become part of the learner as he or she accepts increased responsibility for learning. In the classroom situation the teacher plays the role of the director until the learners are able to carry out more of the indirect functions themselves" (Oxford, 1990a,;-16). When this happens, the teacher's role becomes less directive and more facilitative. This implies a developmental approach with those more proficient in the language using both direct and indirect strategies. The inter-relationship between the direct and indirect strategies are shown in Figure 2.3.

However, there are some overlaps in the strategies presented in this model. The metacognitive strategies which are used by students in self-assessment and planning, require reasoning which is a cognitive strategy. Similarly, the compensation strategy of guessing to make up for missing words also requires reasoning, which is a cognitive strategy, as well as socio-cultural sensitivity which is obtained through social strategies (Oxford, 1990a).

The first of the direct strategies is the memory strategies. Memory strategies reflect very simple principles, such as arranging things in order, making associations and reviewing. These principles all involve meaning. For the purpose of learning a new language, the arrangement and associations must be personally meaningful to the learner and the materials to be reviewed must have significance (Oxford, 1990a). The memory strategies involve creating mental images, applying images and sounds, receiving well and employing action. The processes involved in the memory strategies are given in Table 2.9 below.



Table 2.9: Sub-Strategies in the Memory Strategies

Memory strategies	A. Creating mental linkages	1. Grouping 2. Associating / elaborating 3. Placing new word into a context
	B. Applying images and sounds	1. Using imagery 2. Semantic mapping 3. Using keywords 4. Representing sounds in memory
	C. Receiving well	1. Structured reviewing
	D. Employing action	1. Using physical response or sensation 2. Using mechanical techniques

(Oxford, 1990a)

Memory strategies often involve pairing different types of materials. In language learning, it is possible to give verbal labels to pictures, or to create visual images of words or phrases. Linking the verbal with the visual material is very useful in language learning for four reasons. First, the mind storage capacity for visual information exceeds its capacity for verbal materials. Second, the most efficiently packaged chunks of information are transferred to long-term memory through visual images. Third, visual images may be the most potent device to aid recall of verbal materials. Fourth, a large proportion of learners have a preference for visual learning (Anderson, 1985).

While many language learners benefit from visual imagery, others have aural (sound oriented), kinesthetic (motion-oriented) or tactile (touch-oriented) learning style preferences and therefore, benefit from linking verbal materials with sound, motion or touch. Although memory strategies are powerful tools for language learning, research by Asher (1966) shows that language students rarely report using these strategies. It might be because students do not use memory strategies beyond elementary levels of language learning or that they are unaware of how often they actually employ memory strategies (Oxford, 1990).

The four sets of memory strategies have further sub-sets. The strategy that comprises creating mental images comprises a cluster of three sub-strategies. They are grouping, associating / elaborating and placing new words into a context. Grouping refers to classifying or reclassifying language materials into meaningful units, either mentally or in writing, or to make materials easier to remember. Groups can be based on types of words, topic, practical function, linguistic function, similarity, dissimilarity or opposition, the way one feels about something and so on (Oxford, 1990a).

Associating or elaborating refers to relating new language information to concepts already in memory or relating one piece of information to another, to create associations in memory. These associations can be simple or complex, mundane or strange, but they must be meaningful to the learner. Associations can be "between two things like bread and butter, or they can be between multi-part development such as school-book-paper-tree-country-earth" (Oxford, 1990a: 41). Placing new words into context refers to placing a word or phrase in a

meaningful sentence, conversation or story in order to remember it. This strategy involves a form of associating / elaborating, in which the new information is linked with a context. The second main memory strategy is applying images and sounds. This strategy comprises four sub-strategies of using imagery, semantic mapping, using key words, and representing sounds in memory.

In using imagery, the learner relates new language information to concepts in memory by means of meaningful visual imagery either in the mind or in actual drawing. The image can be a picture of an object, a set of locations for remembering a sequence of words or expressions or a mental representation of the letters of a word. This strategy can be used to remember abstract words by associating such words with a visual symbol or a picture of a concrete object.

In the case of semantic mapping, the learner makes an arrangement of words into a picture which has a key concept in the centre or at the top and related words and concepts linked with the key concept by means of lines and arrows. This strategy visually shows how certain groups of words relate to each other. Using key words refers to remembering key words by auditory and visual links. The first step is to identify a familiar word in one's own language that sounds like new word. This is the auditory link. The second step is to generate an image of some relationship between the new word and a familiar one - this is the visual link. Both links must be meaningful to the learner (Oxford, 1990a).

Representing sounds in memory refers to remembering new language information according to its sound. This strategy creates a meaningful sound based association between the new material and already known material.

The third memory strategy, receiving well comprises one sub-strategy, that is, structured reviewing which involves reviewing in carefully spaced intervals. This strategy might start with a review 10 minutes after the initial learning, then 20 minutes later, an hour or two later, a day later, two days later, a week later and so on. Here the learner keeps spiralling back to what has already been learned, at the same time, he or she is learning new information.

The last of the memory strategies, employing action consists of using physical response or sensation and using mechanical techniques. In the case of using physical response, the learner physically acts out a new expression or meaningfully relates a new expression to a physical feeling or sensation. With mechanical techniques, the learner uses creative but tangible techniques, especially involving moving or changing something which is concrete in order to remember new target language information.

From the processes involved in the memory strategies, it can be deduced that memory strategies could be used by learners with visual (creating mental linkage and applying images), auditory (representing sounds in memory), kinesthetic and tactile (employing action) learning style. The memory strategies appear to be more suitable for those with individual learning style rather than group learning style.

The cognitive strategies involve practising, receiving and sending messages, analysing and reasoning and creating structure for input and output. Each of these strategies has further sub-strategies as shown in Table 2.10 below.

Table 2.10: Sub-Strategies in the Cognitive Strategies

Cognitive strategies	A. Practising	1. Repeating 2. Formally practicing with sounds and writing systems 3. Recognising and using formulas and patterns 4. Recombining 5. Practising naturalistically
	B. Receiving and sending messages	1. Getting the idea quickly 2. Analysing expressions
	C. Analysing and reasoning	1. Reasoning deductively 2. Analysing expressions 3. Analysing contrastively(across languages) 4. Translating 5. Transferring
	D. Creating structures for input and output	1. Taking notes 2. Summarising 3. Highlighting

(Oxford, 1990a)

Cognitive strategies are used by the learner to manipulate or transform the target language. According to Oxford (1990a), cognitive strategies have been found to be the most popular strategies with language learners. Among these, the strategies for practising are among the most important cognitive strategies. (Chamot, O' Malley, Kupper and Impink-Hernandez, 1987; O' Malley *et. al.*, 1985a & 1985b).

The practising strategies are made up of five sub-strategies which are repeating, formally practising with sounds and writing systems, recognising and using formulas and patterns, recombining and practicing naturalistically. Repeating strategy involves saying or doing something over and over again like listening to something several times, rehearsing and imitating a native speaker. Formally speaking with sounds and writing systems involve practising sounds (pronunciation, intonation etc.) in a variety of ways or practising new writing system of the target language. Recognising and using formulas and patterns involve being aware and / or using routine formulas like, *Hello, how are you?* or unanalysed patterns like which has at least one slot to be filled like, *It's time to....*

In recombining, the learner uses unknown elements in new ways to produce a longer sequence as in linking one phrase with another in a whole sentence. By practising naturalistically, the learner practises the language in natural realistic setting as in participating in a conversation, reading a book or article, listening to a lecture or writing a letter in the new language. According to Oxford (1990a) of the five practising strategies, the most significant one is practising naturalistically.

There are two sub-strategies involved in receiving and sending messages. They are getting the idea quickly and using resources for receiving and sending messages. Learners using the first sub-strategy skim the reading material to determine the main ideas or scan to find specific details of interest. In the case of using resources for receiving and sending messages, the learner uses print or

non-print resources to understand incoming messages or produce outgoing messages.

The third cognitive strategy is analysing and reasoning. This is composed of five sub-strategies, namely reasoning deductively (using general rules and applying them to new target language situations), analysing expressions (comparing the sounds, vocabulary, grammar of the new language with those of one's own language to determine similarity and differences), analysing contrastively (determining the meaning of new expressions by breaking it down into parts), translating (using one language to understand another) and transferring (directly applying knowledge of words, concepts or structures from one language in another in order to understand or produce an expression in the new language).

In the final cognitive strategy, that is, creating structures for input and output, there are three sub-strategies. They are taking notes (writing down the main idea or specific points), summarizing (making a summary or abstract of a longer passage) and highlighting (using a variety of emphasis techniques to focus on important information in a passage).

An examination of the strategies involved in the cognitive strategies reveals that they may be suited to learners with visual (recognising and using formulas and patterns) auditory (practising with sound), kinesthetic and tactile (practising with writing system, taking notes, summarising, highlighting) learning style.

Table 2.11: Sub-Strategies in the Compensation Strategy

Compensation strategies	A. Guessing intelligently	1. Using linguistic clues 2. Using other clues
	B. Overcoming limitations in speaking and writing	1. Switching to the mother tongue 2. Getting help 3. Using mime or gesture 4. Avoiding communication partially or totally 5. Selecting the topic 6. Adjusting or approximating the message 7. Coining words 1. Using a circumlocution or synonym

(Oxford: 1990a)

Compensation strategies involve two main strategies, that is, guessing intelligently and overcoming limitations in speaking and writing. These strategies have further sub-strategies as shown in Figure 2.11. The sub-strategies involved in guessing intelligently are using linguistic clues (seeking and using language based clues in order to guess the meaning of what is heard or read in the target language, in the absence of complete knowledge of vocabulary and other elements) and using other clues (seeking and using clues that are not language-based in order to guess the meaning of what is heard or read in the absence of complete knowledge of vocabulary and other elements).



The second compensation strategy, overcoming limitations in speaking and writing has eight sub-strategies. They are switching to the mother tongue (using the mother tongue without translating it), getting help (asking someone for help), using mime or gestures (using physical motion), avoiding communication partially or totally when difficulties arise, selecting the topic (choosing the topic of conversation to make sure that the topic is one in which the learner has sufficient vocabulary and grammar to converse), coining words (making up new words to communicate the desired idea) and using a circumlocution or synonym (getting the meaning across by describing the concept or using a word that means the same thing).

A learner would need compensation strategies when reading, writing or during the course of speaking to others. This might be a strategy that can be used by those with visual, auditory, tactile and group learning style.

Metacognitive strategies are one of the indirect learning strategies. The three sets of strategies in the metacognitive strategies are centering your learning, arranging and planning your learning and evaluating your learning. Each of these strategies comprise sub-strategies as shown in Table 2.12 below.

The three sets of sub-strategies in centering one's learning are overviewing and linking with already known materials (this is done through three steps: learning why the activity is being done, building the needed vocabulary and making associations), paying attention (deciding in advance to pay attention to a language learning task and to ignore distractors), and delaying speech

production to focus on listening (deciding in advance to delay speech production until listening and comprehension skills are better developed).

Table 2.12: Sub-Strategies in the Metacognitive Strategies

Metacognitive strategies	A. Centering your learning	1. Overviewing and linking with already known materials 2. Paying attention 3. Delaying speech production to focus on listening
	B. Arranging and planning your learning	1. Finding out about language learning 2. Organising
		3. Setting goals and objectives 4. Identifying the purpose of a language task (purposeful listening / reading / speaking / writing) 5. Planning for a language task 6. Seeking practice opportunities
	C. Evaluating your learning	1. Self-monitoring 2. Self-evaluating

(Oxford, 1990a)

The arranging and planning of learning strategy consists of finding out about language learning (making efforts to find out how language learning works and using this information to improve one's own language learning), organising (understanding and using conditions related to optimal learning of the new language), setting goals and objectives (setting aims for language learning, including long-terms goals and short-term objectives), identifying the purpose of

a language task, planning for language task (this strategy involves four steps: describing the situation, determining the requirements, checking one's own linguistic resources and determining additional language requirements) and seeking practice opportunities (seeking opportunities to practice the language in a naturalistic setting).

The third metacognitive strategy, evaluating your learning, has self-monitoring and self-evaluating as sub-strategies. Self-monitoring involves identifying errors in understanding or producing the new language, determining which ones are important, tracking the source of the errors and trying to eliminate such errors. Self-evaluating involves evaluating one's own progress in the new language.

The strategies involved in metacognitive strategies would be suitable for learners with visual (overviewing and linking with already known materials), auditory (paying attention, focusing on listening) and group (seeking practising opportunities) learning styles.

The affective strategies involve lowering your anxiety, encouraging yourself and taking your emotional temperature as shown in Table 2.13 below. The first of the affective strategies, lowering your anxiety consist of three sub-strategies. The first of these is using progressive relaxation, deep breathing or meditation. Here, techniques of alternately tensing and relaxing all the major muscle groups are used in order to relax. Other techniques used are breathing deeply and meditating by focussing on a mental image or sound. Other strategies for lowering anxiety are using music (listening to soothing music to

relax) and using laughter (using laughter to relax by watching a funny movie, reading a humorous book, listening to jokes and so on).

Table 2.13: Sub-Strategies in the Affective Strategies

Affective strategies	A. Lowering your anxiety	1. Using progressive relaxation, deep breathing or mediation 2. Using music 3. Using laughter
	B. Encouraging yourself	1. Making positive statements 2. Taking risks wisely 3. Rewarding yourself
	C. Taking your emotional temperature	1. Listening to your body 2. Using a checklist 3. Writing a language learning diary 4. Dscussing your feelings with someone

(Oxford, 1990a)

The sub-strategies involved in encouraging yourself are making positive statements (saying or writing positive statements to oneself in order to feel more confident in learning the language), taking risks wisely (pushing oneself to take risks in a language learning situation even though there is a chance of making mistakes or looking foolish) and rewarding yourself (giving oneself valuable reward for a particularly good performance in the new language).

The last of the affective strategies is taking your emotional temperature. The sub-strategies include listening to your body (paying attention to both negative signals like stress, tension, worry as well as positive signals like

happiness, interest and calmness), using a checklist (to discover feelings, attitudes and motivations towards language learning or to a specific task), writing a language learning diary (to keep track of events and feelings in the process of learning the language) and discussing your feelings with someone else (to discover and express feelings about language learning).

The strategies in the affective strategy might find favour with learners with auditory (using music, using laughter), kinesthetic (using progressive relaxation, deep breathing, meditation), tactile (using a checklist, writing a language diary) and group (discussing your feelings with someone) learning styles.

Figure 2.9 shows the strategies involved in the social strategies. They are asking questions, cooperating with others and empathising with others.

Table 2.14: Sub-Strategies in the Social Learning Strategies

Social strategies	A. Asking questions	1. Asking for clarification or verification 2. Asking for correction
	B. Cooperating with others	1. Cooperating with peers 2. Cooperating with proficient users of the new language
	C. Empathising with others	1. Developing cultural understanding 2. Becoming aware of others' thoughts and feelings

(Oxford, 1990a)

Each of these strategies comprise further sub-strategies. The first of the group strategy that is, asking questions has two sub-strategies. In asking for

clarification, the learner asks the speaker to repeat, paraphrase, explain, slow down or give examples; asking if a specific utterance is correct or if a rule fits a particular case. In asking for correction, the learner asks someone for correction in conversation.

The second social learning strategy is cooperating with others. This includes cooperating with peers, where the learner works with other language learners to improve language skills, and cooperating with proficient users of the new language, where the learner works with native speakers or proficient users of the new language, usually outside the language classroom.

The last of the social strategies is empathising with others. This strategy includes developing cultural understanding and becoming aware of others' thoughts and feelings. In the former case, the learner tries to empathise with another person through learning about his or her culture. In the latter case, the learner observes the behaviour of others as a possible expression of their thoughts and feelings and when appropriate, asks about thoughts and feelings of others.

From the above description, it would seem that social strategies are likely to be preferred by learners with auditory, visual and group learning styles.

The learning strategies and their associated learning styles discussed above were developed based on studying their characteristics. Schmeck (1983) has identified the overall learning style as one of the factors that contributes towards a learner's self-selection of learning strategies. Ehrman and Oxford (1988) showed relationships between learning strategies and cognitive, affective

and social aspects of learning style associated with specific personality types. Miller, Always and McKinley (1987), allude to the correlation that exists between learning styles and strategies as evidenced in an assessment of academic achievement. Abraham (1983) explored the relationship between the second language learning strategy of monitoring and field-dependence / independence. Rossi-Le (1989), carried out a study to determine the relationship between perceptual learning style and learners' selection of learning strategies. In her study Rossi-Le (1989) used a different version of the SILL (SILL version 5); the instrument used in this study is SILL version 7). No study has been conducted to show the extent to which perceptual learning style influences a student's choice of strategies as it relates to the system of language learning strategies proposed by Oxford (1990a) as shown in diagram 2.3. This study is an attempt to look at the relationship between Perceptual Learning Style as defined by Reid (1987) and the learning strategies as proposed by Oxford (1990a), in a Malaysian setting using Malay students from a selected institution of higher learning.

#### Research Studies on Learning Strategies

Researchers on second language learning have not been able to come to a consensus as to what is a strategy. This is reflected in the literature where strategies are referred to as "techniques", "tactics", "potentially conscious plan", "consciously employed operations", "learning skills", "basic skills", "functional skills" and "language learning behaviours". Wenden and Rubin (1987), have defined strategies as having the following characteristics:

- some can be observed - there is an observable behaviour that accompanies the mental act as when learners ask a question to clarify something they do not understand. Other strategies cannot be observed, as when learners infer or compare;
- cognitive strategies may be deployed consciously in response to a problem a learner has clearly perceived and analysed. They can also become automatised. The decision to use them remains below consciousness - a learned solution to a class of learning needs or problems, with which learners are familiar;
- strategies, unlike more enduring personality characteristics of a learner, including learning style are amenable to change. Ineffective ones can be changed or rejected, new strategies can be learned and well-functioning strategies can be adapted to new situations; and
- strategies are problem-oriented. Learners use them in response to different kinds of learning problems.

Several researchers have attempted to study the strategies used by successful language learners. One unsubstantiated hypothesis is that successful learners use more and better learning strategies than do poor language learners (Rubin, 1975; Naiman *et. al*, 1975; Stern, 1983; Ramirez, 1986). In addition, research has shown that more effective language learners use more appropriate strategies than do less effective learners in each of the four language skills (Tyack and Mendelsohn, 1986; Hosenfield, 1977). In the sense that expert



language learners employ useful strategies more often than do others, language learning strategies might be said to predict ultimate language skill or proficiency.

What are some of the strategies shown to characterise the best language learners? Rubin (1975), suggested that the "good" language learner is a willing and accurate guesser; has a strong, persevering drive to communicate, is often uninhibited and willing to make mistakes in order to learn or communicate; focusses on form by looking for patterns; takes advantage of all practice opportunities; monitors his or her own speech and that of others; and pays attention to meaning. Reiss (1985), found that most of these characteristics except lack of inhibition, actually did hold up in empirical research. Naiman *et. al.* (1975), named six strategies of successful language learners: selecting language situations that allow one's preferences to be used, actively involving oneself in language learning; seeing language as both a rule system and a means of communication; extending and revising one's understanding of the language; learning to think in the language; and addressing the affective demands of language learning.

Wesche (1979) carried out a study of learning behaviours of successful adult students in intensive language training. He compared the interview findings of highly successful students with those who were less successful. Highly successful learners tended to consciously expose themselves to the target language and to practise it in different ways. In most cases, they appeared to be insightful about their ways of learning and had strong and multiple reasons for learning the language. However, the type of learning procedures were similar to

both groups. Results from interviews with successful students suggested that rehearsal, many types of association-making, and practice (retrieval) are important techniques in the learning of new language materials.

Oxford and Nyikos (1989), found a strong association between strategy choice and self-perceived proficiency in a large university sample, with greater strategy use accompanying perceptions of higher proficiency in listening, reading and speaking but not in writing. Ehrman and Oxford (1988), examined the strategies (and the styles) of more successful and less successful language learners, with success being defined by ratings of their end-of-term performance. The researchers found for the most part that strategies used by learners closely mirrored their preferred style. However, some learners were able through training, external suggestion or conscious effort to access and use less-preferred strategies - thus gaining more flexibility and power as language learners.

#### Frequency of Use of Various Strategy Types

Researchers have been interested in the frequency with which certain language strategies are used. The most detailed study on strategy frequency, used several different data collection techniques and different sample groups of students, including high school and military ESL students and high school and university foreign language students (Chamot *et. al.* 1987; O'Malley *et. al.* 1985a; O'Malley *et. al.* 1985b). The researchers found that cognitive strategies (for example, repetition and note-taking) are used more often than metacognitive strategies; that the most common metacognitive strategies involve planning, with

little use of self-monitoring or self-evaluation; and that socio-affective strategies are infrequently reported.

Oxford and Nyikos (1989), reported heavy use of analytic, formal practice strategies in the university setting, which often stresses discrete point testing and grammar based instruction. McGroarty (1987), found a similar pattern of strategies. Studies of adult foreign language learners who need to use the new language for their work show a different pattern, with greater use of strategies for searching for and communicating meaning than was found in university students (Ehrman and Oxford, 1988). From this, it can be seen that there is no single most common pattern of strategy use across all groups. This implies that a number of important factors influence strategy selection.

#### Factors Affecting Strategy Choice

Many factors have been found to influence learning strategy choice. Among these are the language being learned, duration, degree of metacognitive awareness, age, sex, affective variables such as attitudes, motivational level / intensity, language learning goals, motivational orientation, and personality characteristics, career orientation, national origin, language teaching methods and task requirements Chamot *et. al.* (1987).

The language being studied has an influence on the strategies that are used. Chamot *et. al.* (1987), found that students of Russian reported greater strategy use than students of Spanish. Politzer (1983) in examining the learning strategies of students of French, Spanish and German, discovered that students

of Spanish engaged in fewer positive strategies than did students of other languages. It is believed that this difference could be due to the interaction among a host of other variables including the motivation level of the students and the teacher's teaching methods.

Duration refers to the course level and the number of years of language study. As students progress to higher levels they use somewhat different strategies, according to several researchers. Politzer (1983), discovered that course level influenced foreign language learning strategies. Chamot *et. al.* (1987) found that cognitive strategy-use decreased and metcognitive strategy use increased, but socio-affective strategy use remained very low across all levels. McDonough and McNerney (in Tyacke and Mendelsohn, 1986), discovered that more advanced learners diminished their use of less useful or less relevant strategies and geared their strategy use more directly to the language task at hand. In another study, Nyikos (1987), found that university students showed developmental trends in strategy, with decreasing and increasing use of various strategies as the semester progressed. Tyacke and Mendelsohn's diary study showed that lower-level students generally depended much more on their teacher and on strategies related to the linguistic code than did higher-level students.

Bialystok (1981), found differences in strategy use as learners advanced in French. Formal practice with rules and forms was decreasingly used as students advanced, but functional practice with authentic communicative language displayed no such limitations. Oxford and Nyikos (1989) support

Bialystok's (1981) results. They discovered that foreign language students who had studied the new language for a minimum of four to five years, used communication-oriented strategies more often than less experienced students. Cohen and Aphek (1981), found that advancement in course level or years of study does not necessarily mean that students use more appropriate strategies in every instance. They found the use of both helpful and unhelpful strategies appearing across course levels. However, most of the research does show that in general, the more advanced the language learners, the more appropriate the strategy would be for a given task and learner.

Degree of metacognitive awareness was found to be another factor influencing choice of learning strategies. Learners' knowledge about themselves and about their own learning process can affect their use of language learning strategies (Wenden, 1986). Researchers dispute learners' level of strategy awareness. Nyikos (1987), found that learners used only a narrow range of strategies and were generally unaware of the strategies they used. Tyacke and Mendelsohn (1986) found only one of the learners in their study showed increasing awareness of strategies as they become more advanced. In contrast, Chamot *et. al*, (1987) discovered that even ineffective learners were aware of and used a number of strategies, the difference between effective and ineffective students being that the former reported greater frequency and greater range of strategy use.

Studies carried out by Ehrman and Oxford (1989) and Oxford (1986) on adult learners showed that they used more sophisticated learning strategies than

did younger learners. The difference could be attributed to the difference in motivational levels of the two groups. The adults were learning for immediate career purposes. Other researchers have attributed the difference in strategy choice with age to the different ways these individuals gained their language skills; the younger subjects in a natural way while the older learners in a classroom setting.

Gender has been found to influence strategy choice. Politzer (1983) reported that females used social learning strategies significantly more often than males. In a study of adult language learners, Ehrman and Oxford (1989) found that females, as compared to males reported significantly greater use of language learning strategies in four categories: general study strategies, functional practice (authentic language use) strategies, strategies for searching and communicating meaning, and self-management strategies. Oxford and Nyikos (1989) found that females used language learning strategies more often in three of five strategy areas: formal rule-based practice strategies, general study strategies and conversational / input elicitation strategies. Therefore, the sex difference findings to date show that in typical language learning situations women use significantly more learning strategies than men and use them more often.

Attitudes of learners have been found to strongly influence language learning and therefore are likely to influence the choice of strategies. Bialystok (1981) found that learners' attitudes were highly influential in choice of language learning strategies - more influential than aptitude. Wenden (1987), has argued

that unless negative attitude towards learners' self-direction are changed, no amount of training in better learning strategies will have a sustained effect on learning strategy use.

According to Gardner (1985:85), "the prime determining factor in language learning success is motivation" because motivation determines the extent of active personal engagement in language learning. A study by Oxford and Nyikos (1989) found that motivational level significantly affected the tendency of language students in the use of four different sets of strategies out of five: formal rule-related practice strategies, functional practice (authentic language use) strategies, general study strategies, and conversational / input elicitation strategies. Highly motivated learners used these types strategies significantly more often than did less motivated ones.

Language learning goals and motivation orientation was found by Oxford and Nyikos (1989) to influence the choice of language learning strategies. In the same study on university students reported above, they found that the most popularly used strategies were formal rule-related practice strategies and general study strategies. The least popular were the functional practice (authentic language use) strategies, which required a greater personal investment in the target culture and demanded more extra curricular effort in finding naturalistic practice situations. These results have been attributed to what appeared to be purely instrumental motivation for language learning, reflected in the overriding goals of most students in the sample: to fulfill the academic language requirements and to earn good grades in a relatively traditional academic

environment. Developing communicative competence did not seem to be a personal goal of most of the students.

Ehrman and Oxford (1989) found more frequent use of functional practice (authentic language use) strategies among two sets of adult learners who were *learning foreign languages for career reasons*. These learners appeared instrumentally motivated to identify with people of the target culture. Nonetheless, their instrumental motivation led them to use *communication-oriented strategies*, in contrast to the instrumental motivation towards grades shown by university students. Politzer (1983) studied the language learning strategies of Asian and Hispanic graduate students learning English. He found that they were instrumentally, rather than integratively motivated to learn the language.

Personality characteristics can be long-term traits or more situational states invoked by the demands and pressures of given language learning circumstances. As mentioned earlier Rubin (1975), found that "good" language learners are uninhibited and willing to risk appearing foolish or to make mistakes in order to communicate and learn. Bailey (1983) found personality features of *anxiety and competitiveness* to be reflected in language learning behaviours. Some learners tried harder and performed better under competitiveness and anxiety but other learners *faltered under pressure*.

Career orientation may be defined as field of specialisation (usually university major) or as current career position. Several studies have shown that career orientation relates to choice of language learning strategies. Politzer and McGroarty (1985) found that field of specialization (engineering / science versus



social science / humanities) was associated with strategy choice of ESL students. Engineers avoided language learning strategies that are usually viewed as positive.

In the study of foreign language learners, Oxford and Nyikos (1989) discovered that students' university majors influenced strategy use. Humanities, Social Science and Education majors used two different categories of strategies (independent strategies and functional practice (language use) strategies more often than students in other areas.

Ehrman and Oxford (1989) found that current career position influenced foreign language learning strategy choice. Professional linguists used a wider variety of strategies than did adult language learners. Reid (1987) found that ESL students' fields of specialisation were related to learning modality preferences, which are probably related to the choice of language learning strategies.

Numerous studies have shown that national origin or ethnicity has a strong association with the kinds of strategies used by language learners. Asian students seem in some studies to prefer strategies involving rote memorisation and language rule as opposed to more communicative strategies (Politzer and McGroarty, 1985). Asian, as compared to Hispanics responded less positively to strategy training (Russo and Stewner-Manzanares, 1985). Differences in learning strategy use by national origin has prompted Politzer and McGroarty (1985) to ask whether the conception of good language learning strategies might be ethnocentrically biased.

Language teaching methods and unspoken expectations in the instrumental environment has been found to influence language learning strategy use. Sutter (1987), stated that the longer students remained in a language programme, the more they tended to prefer the language learning strategies subtly suggested by that programme's instructional methods. Politzer (1983) found a complex interaction between language teaching methods and learning behaviours (strategies) for university students of French, Spanish and German. Ehrman and Oxford (1989) found greater use communication-oriented strategies by adults who were learning for professional reasons and whose teachers used more communicative methods. Because teaching methods often influence how students learn, teachers should become more aware of their students' learning strategies in order to orient teaching methods more appropriately.

The immediate requirements of language tasks can influence the use of language learning strategies. Bialystok (1981) found that students responded to different task requirements with different strategies. Some strategies were useful for only certain kinds of tasks. For example, monitoring one's own errors was more suitable for writing tasks than for reading and speaking tasks. However, functional practice promoted language achievement on all language tasks. McDonough and Mcnerney (in Tyacke and Mendelsohn, 1986), found that more advanced students keyed their strategy use to particular task requirements more often than did less advanced students.

Hagen, Barclay and Newman (1982), in their article "Metacognition, self-knowledge and learning disabilities: some thoughts on knowing and doing," say

that a child's personal belief, motivation and affect clearly influence the ways the child addresses and solves problems. According to them research on self-esteem has demonstrated a clear link between an individual's judgement of his or her own competence and that individual's actual competence on school-related tasks. The implication for metacognitive theory and methodology is that attention must be given to "personal variables" such as intentions, attributions, expectancies and beliefs about one's competence and learning abilities.

Bransford, Stein, Shelton and Owings (1981) focussed on people's abilities to learn new information by consulting written documents and texts. Evidence suggests that academically successful and less successful students may take different approaches to the pattern of learning. Successful students seem more likely to evaluate the arbitrariness of factual content and to spontaneously activate knowledge that can make information more meaningful and significant. When less successful students are explicitly prompted to ask themselves relevant questions (for example, What is the relationship between this fact and this activity?), their performance improves; so does their enjoyment of the tasks.

Markman (1981), states "the ability to monitor one's comprehension is necessary for academic excellence . . . without knowledge about comprehension, comprehension itself will suffer" (p. 81). Research on college student's monitoring skills indicate that they are deficient in these strategies (Baker, 1979). This according to Scallert and Kleiman (1979), is because in schools the comprehension monitoring function is performed by teachers for their students.

Teachers try to stay in tune with their students' level of understanding by watching for subtle clues and by stopping at appropriate times to ask questions in order to ascertain students' weak spots. In other words, teachers are very often more active in the learning process than are the students. These teaching behaviours do not help the students gain independence by developing effective comprehension - monitoring strategies of their own (Weinstein and Rogers, 1985). According to Weinstein and Rogers (1985) and Chamot *et. al.* (1987), successful students learn to adopt active strategies for themselves, incorporating monitoring behaviours into their repertoire of learning skills. Less successful students continue to rely on teachers for these functions.

According to Dansereau (1978), by not stressing learning strategies, educators in essence discourage students from developing and exploring new strategies, and in so doing limit students' awareness of their cognitive capabilities. Results of Dansereau, Long, McDonald, Atkinson, Ellis, Collins, Williams and Evans, (1975) administration of an extensive learning strategy inventory, indicate that even good college students have very little knowledge of alternative learning techniques. According to them, if the strategies that individuals have spontaneously adopted do not match their cognitive capabilities, the emotional toll may be very large.

Willing (1987) says that an increased emphasis on helping learners learn how to learn would be valuable. Given the limitation of time and resources for teaching specific language content, it is clear that learners could benefit greatly in the long run if a substantial proportion of the formal learning time available is

used to train students in ways of learning for themselves. Wenden (1985) was one of the first to assert that learner strategies are the key to learner autonomy and that one of the most important goals of language training should be the facilitating of that autonomy. Teachers can benefit from an understanding of what makes learners successful and unsuccessful, and establish in the classroom, a milieu for the realisation of successful strategies. All these arguments suggest that teachers should promote learner autonomy. In order to do this, learners must be given strategy training. Wenden (1991) has suggested that the guidelines for strategy training should be based on the following principles:

- Informed-Strategy training should be informed. Informed training is explicit about its purpose and about the value or significance of the expected results. Research by Paris *et. al.* (1982), has shown that giving students information about the value of a strategy, that is, about where and how often it may be used greatly enhances the positive outcomes of training studies. Brown and Baker (1984) consider that informed training is in effect training for lateral transfer. When students are given information about where a strategy can be used, it is more likely that they will use it not only in the training content but in a variety of other appropriate settings.
- Self-regulation-Students should be trained how to regulate or oversee the use of the strategy, i.e. when it is appropriate to use it; the difficulties they have implementing it and its effectiveness. This refers to how learners manage their learning that is plan or decide what they are going to learn and by what means; monitor their attempts to learn for difficulties and check the outcome

of their learning. Research report on strategy training in non-ESL contexts have demonstrated that learners who were trained to monitor and evaluate their use of strategies were also more likely to continue using them and to initiate their use in a variety of contexts (Brown and Palinscar, 1982).

- Contextualised-Strategies should be contextualised. Training should be in the context of the subject matter content and / or skill for which it is appropriate. It should be directed to specific language learning problems related to the learner's experience. Research by Brown and Baker (1984) has shown that transfer of training does not take place when strategy is taught in isolation from a context where it will be used while contextualised training has more successful outcomes.
- Interactive-Strategy training should be interactive. According to the mode of training, learners are not told what to do and then left on their own to practise. Rather, until they experience some ability to regulate their use of the strategy, teachers are expected to continue to work with them, giving them opportunity to observe the use of the strategy, to imitate what they observe and to receive feedback on their attempt to use it. Research with teacher-pupil interactions has shown that there is a systematic regularity in how this guidance works out. First, the trainer controls the learner's activity. Gradually, however, the trainer and learner share the problem solving functions, with the learner taking initiative and the trainer correcting and guiding when the learner has difficulty. Finally, the trainer ceases control and functions primarily as a sympathetic and supportive audience (Brown *et. al.*, 1982).

- **Diagnosis** - The content of the training should be based on the actual proficiency of the learners. Therefore, at the outset of any strategy training, information on which strategies students use and how well they use them should be collected. There are two reasons for determining which strategies the learners already use and how well they use them. First, there are an infinite number of learning skills or strategies necessary for effective learning. A second reason for preceding strategy training with a diagnosis of learners' skills is that intervention should match need (Raphael and McKinney, 1983).

#### Relationships between Styles and Strategies

There have not been many studies on the relationship between learning styles and strategies. According to Oxford (1989c), it is likely that a strong relationship exists between individual preferred styles and their choice of language learning strategies. An ongoing study by Ehrman and Oxford (1988), investigated the relationship between learning style and strategy choice. The SILL was used to measure strategy choice while the learning style was measured using the MBTI (Myers, 1982). This study found statistically significant causal relationships between styles and strategies. In the quantitative part of the study, extroverts reported significantly greater use of affective strategies and visualisation strategies than did introverts but introverts reported significantly more frequent use of strategies involving searching for and communicating meaning. As compared to sensing people, intuitive people used significantly more strategies in four categories: affective, formal model building, functional

practice, and searching for and communicating meaning. Feeling-type people, as compared to thinkers showed significantly greater use of general study strategies. Perceivers, defined as those who do not need to come to closure rapidly, used significantly more strategies for searching for and communicating meaning than did judges, who require rapid closure; judges showed significantly more use of general study strategies than did perceivers.

The focus of this study, is the relationship between perceptual learning style and choice of learning strategies, in which perceptual learning style preferences are measured using PLSP questionnaire (Reid, 1987) and learning strategies are measured using Oxford's SILL version 7. There is no known previous study using the said instruments. However, the literature on studies of the relationship between learning style as measured by the MBTI and learning strategies as measured by the SILL, indicate that there is a possibility for significant relationships between perceptual learning style preferences and learning strategies.

### Conclusion

Theories of human learning such as Pavlov's classical behaviourism, Skinner's operant conditioning, Ausubel's meaningful learning theory and Rogers's humanistic approaches have formed the foundation for varying second language teaching approaches and methods. Lower level aspects of second language learning may be adequately treated by behaviouristic approaches and methods while certain "higher" order types of learning contexts are more



effectively taught by methods derived from a cognitive approach to learning as proposed by the meaningful learning theory and humanistic approaches. In addition to cognitive considerations, studies show that success in second language learning is equally dependent on the affective variables of the learner. Several personality variables have been found to have an effect on second language learning. They are self-esteem, inhibition, risk taking, anxiety, empathy, extroversion and motivation.

Just as with the theories of human learning, there are many theories of second language acquisition with diverse and even diametrically opposing views. Since many of these theories have been borne out of personal experiences of the researchers, it is suggested that those elements of these theories that are not categorically rejected be accepted to form a composite picture of second language learning in the way a painter would create a painting.

All learners have individual attributes relating to their learning processes that is, their own learning styles. Learning style has been defined differently by different researchers, depending on how they view the construct and operationalise it. A definition that encompasses all the different versions is that suggested by Robotham (1999), that is, learning style is the general tendency towards a particular learning approach displayed by an individual. According to Dunn and Dunn (1993), no learning style pattern is better or worse than another. Each style encompasses similar Intelligence ranges.

Although the focus of this study is perceptual learning style preferences, literature on several other learning styles has been reviewed to better understand the concept of learning style. The discussion of the different theories and models on learning styles provides a global view of the concept as well as justification for the selection of the perceptual learning style preferences for the study of ESL learners. The on-going attempt to construct a profile of the second language learner has led to the consideration of perceptual learning style preference as an important component of the language acquisition process. Research on perceptual learning style preferences is based on the assumption that learners receive information through their senses and prefer some senses to others. Studies have shown that the way information is perceived, processed and stored varies from one individual to another and is influenced by background factors of the student such as self-esteem, age, gender, ethnicity (culture), field of study, attitudes, beliefs and motivation, parents' influence, proficiency in the language and past experiences.

Review of literature on learning style suggests that there are two very distinct schools of thought about matching learning styles with instructional styles. There is supporting evidence to show that students tend to learn and remember better, and to enjoy learning more, when they are taught through their learning style preferences and therefore, it is good practice to recognise and accommodate individual differences in the classroom. In theory, where there is lack of congruency between the preferred learning style(s) of individuals and the

approach adopted by the teacher, the student may mentally opt-out of the programme, although still physically attending. However, those holding opposing views say that apart from it being difficult to cater to all the different styles in the classroom, to continually direct learning activities to a single learning style may promote the adoption of a narrow learning focus within a particular individual. As an alternative, they suggest that the use of systematic mismatches between instructional approach and learning style may encourage the development of a wider learning style repertoire. In this way the learners can develop their learning capability to the point where they may consciously choose a learning style they find harder to learn through, as it is the most appropriate learning style for a particular learning task. A proficient learner is not someone who can learn within a narrow range of activities as defined by a particular learning style, but rather someone who demonstrates the ability to select an appropriate learning style, from a range, according to the demands of the situation and their own learning capabilities.

Research studies that have been reviewed show that students learn more effectively when they learn through their own initiative. Knowledge of one's own learning style is essential in learning to learn. Self-direction is essential in the active development of adult's abilities in learning. It is especially important for ESL learners to be self-directed since it is impossible to give them guidance or instruction when they use the language outside the classroom. Teachers should help ESL students discover their own learning preferences so that they can

capitalise on their strengths. Whether or not an individual's dominant perceptual style influences his / her strategic approach to language learning is the basis of this study.

Learning strategies are steps taken by language learners to enhance any aspects of their learning. In this study, the strategy system for language learning proposed by Oxford (1986) is used as the basis for determining the learning strategies used by the ESL students. This strategy system has six coherent groups. The six strategy groups are memory, cognitive, compensation, metacognitive, affective and social. The first three directly involve the subject matter and are called direct strategies. The last three are called indirect strategies because they do not directly involve the subject matter but are more concerned with the management of learning.

Successful language learners use a variety of language learning strategies to become more self-directed and improve their performance. Studies show that cognitive studies are used more often than metacognitive strategies. Social and affective strategies are used far less often. Choice of strategies is influenced by a number of factors: the language studied, the course level or learning level, the degree of strategy awareness, age, gender, attitudes, motivation, purpose and goal, personality characteristics, career, national origin, teaching methods and task requirements. More advanced students often use more task-relevant strategies. Learners who are more aware of themselves as

learners and of their skills use more appropriate strategies than do learners who are less aware. Older students often use different strategies than do younger students. Females appear to use significantly more strategies than males. They tend to use more social and communicative strategies. Learners with positive attitudes, stronger motivation and more communicative goals use more strategies. Personality characteristics such as competitiveness or strong emotionality influence the kinds of strategies chosen. People in different career fields tend to use different kinds of language learning strategies. Ethnicity and cultural factors affect strategy choice. Requirements of specific tasks influence the use of certain type of strategies.

While there have been studies to show that learning style influences the student's selection of learning strategies, there has been no known study of the relationship between perceptual learning style preferences and learning strategies, using Oxford (1987) model.

Based on the review of literature, the following hypothetical model has been proposed, which will be used to guide this study (Figure 2.10 below).

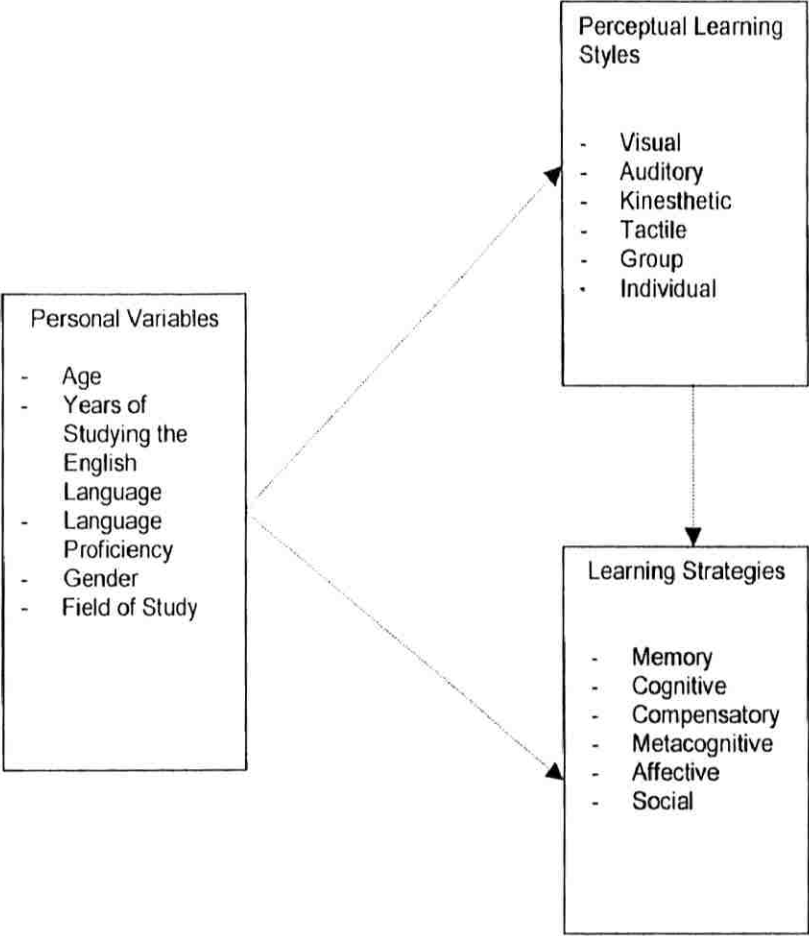


Figure 2.4: Hypothetical Model of the Relationship Between Perceptual Learning Style Preferences and Learning Strategies