

IN THE NAME OF GOD



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**The Relationship between Perceptual Learning Style Preferences
and Skill-based Learning Strategies**

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Abstract

During the last three decades, there has been a shift of paradigm from teaching methodologies to learning processes and learner characteristics. Research suggested that a host of cognitive, affective, and perceptual variables are at work when individuals go about the task of second or foreign language learning. Among these variables are learning styles and strategies. This study aimed at shedding some light on the relationships that exist among learner characteristics (i.e., gender, age, discipline, self-rated English proficiency level), perceptual learning style preferences, and skill-based (e.g., reading) and function-based strategies (e.g., metacognitive).

The participants were 138 graduate students from six faculties at Shahid Beheshti University, Tehran, Iran. They were randomly selected based on a two-stage sampling procedure and were asked to respond to two translated and pretested questionnaires: (1) Reid's (1984) *Perceptual Learning Style Preference Questionnaire* for assessing learning style preferences and (2) Cohen, Oxford, and Chi's (2002) *Learning Strategy Use Survey* for assessing skill-based and function-based strategies.

Results revealed that the participants favored kinesthetic and tactile learning modalities and disfavored group learning. They also reported using reading and compensation strategies significantly more often than strategies in most other categories. Speaking, memory, and vocabulary learning strategies were used less often than other strategies. In addition, most of the background variables under study seemed to affect the participants' learning styles and strategy choice. And finally, kinesthetic modality was found to be significantly correlated with all strategy categories, and group learning was associated with social strategies. The findings of the study and their implications are also discussed.

Keywords: *Learning styles, Perceptual learning style preferences, Learning strategies, Skill-based learning strategies, Function-based learning strategies.*

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List of Abbreviations and Acronyms

AS	Affective Survey
BALLI	Beliefs About Language Learning Inventory
CALLA	Cognitive Academic Language Learning Approach
CSA	Cognitive Styles Analysis
E&L	Ehrman and Leaver
EFL	English as a Foreign Language
ESL	English as a Second Language
GEFT	Group Embedded Figures Test
GLL	Good Language Learner
LSI	Learning Style Indicator
LSUS	Language Strategy Use Survey
MBTI	Myers-Briggs Type Indicator
OCSI	Oral Communication Strategy Inventory
PLSPQ	Perceptual Learning Style Preference Questionnaire
SAS	Style Analysis Survey
SILL	Strategy Inventory for Language Learning
SORS	Survey of Reading Strategies
SSBI	Styles- and Strategies-Based Instruction
TOEFL	Test of English as a Foreign Language

Chapter One



INTRODUCTION

Literature Review

Methodology

Results & Discussion

Conclusion

In this chapter, a brief overview of the topic of the study will be first presented. Then, the problem the study seeks to find answers for along with the related research questions will be stated. Finally, after describing the rationale for conducting the study, key terms will be defined.

1.1. Background of the Study

It was not until the mid 1960s that there was a shift of paradigm in educational psychology away from the behaviorist stimulus-response approach to a cognitive approach with an emphasis on the information-processing model of language learning. This rather radical departure was not without its implications for learning in general and second or foreign language learning in particular. The long-held assumption that teachers should bear the primary, if not the sole, responsibility for learners' language learning was called into question, and a more learner-focused approach, in which learners could find their own individualized learning paths to ultimate success and autonomy, was called for.

To this end, there emerged a number of studies into how and why individuals learn a new language at different rates and with varying degrees of success. The solution was provided in light of learners' individual differences; that is, every learner brings to the language learning context a host of personal factors, over some of which he has no control (e.g., age and gender), and some are within his partial or full control (e.g., motivation, learning styles, and learning strategies). Empirical research has indicated that these learner characteristics have an important bearing on how well and how fast a learner is able to master a second or foreign language. Among these individual variables, learning styles and learning strategies, which often go hand in hand, have received considerable attention over the last two decades. Learning styles are related to the general and habitual ways through which one typically acquires and retains information. Learning strategies, in turn, refer to those specific and conscious activities learners employ when facing a language task or problem so as to make it easier and more enjoyable. It has been said, and also supported by empirical data, that the learners' choice of certain strategy types is very much dependant upon their

preferred learning styles (e.g., Rossi-Le, 1989). In addition, both of these variables are themselves a function of a multitude of other factors.

Oxford (1989) offered a synthesis of the studies carried out regarding language learning strategies and the variables that affect their choice including learning styles. Stressing the importance of learners' preferences, she, however, asserted that "little research has been dedicated to the relationship between learning strategy use and learning style" (p. 241). Likewise, among the recommendations resulting from the survey Willing (1988) conducted into the learning styles in adult migrant education, a similar assertion was made:

It is hoped that classroom practice will become geared to the developing of good and appropriate learning strategies (to a much greater degree than at present). This means:

- (a) Exploration of strategies which learners are already making use of.... This exploration can be done through questionnaire and discussion.
- (b) Exploration of the relation between individual learning style and the person's existing strategies. (p. 172)

There has been, thus, a renewed interest in these two areas in language pedagogy at the turn of the century under the general heading of *styles- and strategies-based instruction* (SSBI, Cohen & Weaver, 2005). Put simply, it is now claimed that any language strategy treatment to be most effective should be viewed in light of learning styles that individuals bring with themselves to the language learning context.

This study aims at investigating the learners' patterns of learning style preferences and the learning strategies they employ and whether there is a relationship between learning styles and strategies.

1.2. Statement of the Problem

As Oxford (1989) argued, “A strong relationship exists between the individual’s use of learning strategies and the individual’s learning style.... Sadly little research has been dedicated to the relationship between learning strategy use and learning style” (p. 241). Ehrman also claimed that “learning style mismatches are at the root of many learning difficulties” (1996, p. 50). She went on proposing six areas of mismatch, one of which includes the mismatch between the students’ learning styles and the learning strategies applied (e.g., when a field independent learner tries to apply social strategies, or a global learner uses bottom-up reading strategies). On the other hand, learning styles and especially learning strategy application may differ across individuals in terms of such variables as gender, age, field of study, and proficiency level, and this makes the picture more complicated. Therefore, exploring learners’ learning styles and strategies and their correlates from the outset of any teaching program and, accordingly, taking into account the impact of various style characteristics on any individual’s learning could reduce many mismatches, hence enhancing learning effectiveness.

It is also worth mentioning that most of the previous studies in this area have focused on strategy categories based on functions (i.e., cognitive, metacognitive, etc.), and there appears to be a need to investigate strategy use across different language skills (i.e., listening, speaking, etc.). For one thing, adopting a skill-based approach is more learner-friendly; that is, learners can more easily think of “making summaries in the margin of the book” as a reading strategy than as a cognitive one. For another, it could be assumed that tasks across different language skills would call for differential patterns of strategy choice, and if this notion is viewed in light of learners’ preferred

learning styles, the end result would shed more light on how some learners with a certain preferred learning style are more successful than others.

The purpose of this study is, as such, to explore the possible patterns of relationship between learning style preferences (viz., visual, auditory, kinesthetic, tactile, individual, and group) and skill-based strategies (viz., listening, speaking, reading, writing, vocabulary learning, and translation) and function-based strategies (viz., memory, cognitive, compensation, metacognitive, and social). In addition, the effects of gender, age, discipline, and proficiency on both learning style preferences and learning strategies are studied.

1.3. Research Questions

Based on the purpose of the study, the following research questions were developed:

1. What is the pattern of learning style preferences among graduate students of different disciplines at Shahid Beheshti University?
2. What is the relationship between the participants' learning style preferences and their gender, age, discipline, and self-rated English proficiency level?
3. What is the participants' pattern of skill-based strategies?
4. What is the relationship between the participants' skill-based strategies and their gender, age, discipline, and self-rated English proficiency level?
5. What are the participants' five most and least frequently used strategies?
6. What is the participants' pattern of function-based strategies?
7. What is the relationship between the participants' function-based strategies and their gender, age, discipline, and self-rated English proficiency level?
8. Is there any significant relationship between the participants' learning style preferences and their reported use of leaning strategies?

1.4. Rationale of the Study

The relationship between learning styles and learning strategies has enjoyed considerable attention during the last two decades. However, much still remains to be learned. One important point that singles out this study is the employment of a recently developed questionnaire, called the *Language Strategy Use Survey* (LSUS, Cohen, Oxford, & Chi, 2002), that assesses language strategy use across different language skills. The rationale behind using this new questionnaire is simple: There has been an overuse of Oxford's (1990) *Strategy Inventory for Language Learning* (SILL) as an instrument in learning strategies research. Although the SILL is a valid and reliable instrument, there has been a call for conducting research utilizing other measures (Cohen & Weaver, 2005). Needless to say, while the SILL assesses strategy use in terms of function (i.e., cognitive, metacognitive, etc.), the newly developed questionnaire is based on language skills and suits the purpose of this study very well.

On the other hand, as mentioned before, *tasks* across different language *skills* might evoke certain *strategies*. This is, in part, what the questionnaire (i.e., Cohen, Oxford, & Chi, 2002) tries to assess. The results are, accordingly, viewed in light of individuals' *learning styles*. Put this way, it is not difficult to find support for the significance of the study. Cohen (2003), shedding some light on a theoretical framework of the intersection of styles, strategies, and tasks, concluded his paper with a call for more research on this interrelationship; he emphasized, "More *descriptive research* [italics added] regarding the intersection of task, styles, and strategies would be beneficial" (p. 290). Moreover, according to Ehrman, Leaver, and Oxford (2003), a strategy can be useful if three conditions are met: (1) the strategy relates well to the given L2 task, (2) the strategy fits a particular student's learning style preferences to one extent or another, and (3) the learner employs the strategy effectively and links it

with other relevant strategies. They attributed the often mixed results in strategy research to the fact that the “students’ diversity of learning styles and needs was not systematically taken into account” (p. 318). It is, therefore, evident that when learning strategies are viewed in light of learning styles, more insightful interpretations and conclusions could be drawn.

It is worth noting that, to the best of the researcher’s knowledge, there exists no published study reporting on the strategies related to all four skills at the same time. As a consequence, in order to compare the results with those obtained in the previous studies using the SILL and also to provide a clearer picture of strategy patterns, the questionnaire items will be reclassified to cover five categories of function-based strategies.

1.5. Definition of Key Terms

Learning styles: A learning style is “an individual’s natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills” (Reid, 1995, p. viii). Different perceptual and sociological learning styles cover visual, auditory, kinesthetic, tactile, individual, and group learning dimensions.

Visual learners: Visual learners “prefer to learn via the visual channel. Therefore they like to read a lot, which requires concentration and time spent alone. Visual students need the visual stimulation of bulletin boards, videos, and movies. They must have written directions if they are to function well in the classroom” (Oxford, 1995, p. 35).

Auditory learners: Auditory learners are “students who enjoy the oral-aural learning channel. Thus they want to engage in discussions, conversations, and group work. These students typically require only oral directions” (Oxford, 1995, p. 36).

Kinesthetic learners: Kinesthetic learners favor “total physical involvement with a learning environment such as taking a field trip, dramatizing, pantomiming, or interviewing” (Kinsella, 1995, p. 172).

Tactile learners: Tactile learners favor “learning with [their] hands through manipulation of resources, such as writing, drawing, building a model, or conducting a lab experiment” (Kinsella, 1995, p. 172).

Individual learners: An individual learner is someone who “learns more effectively through working alone” (Reid, 1995, p. x).

Group learners: A group learner is the one who “learns more effectively through working with others” (Reid, 1995, p. x).

Learning strategies: They are “activities consciously chosen by learners for the purpose of regulating their own language learning” (Griffiths, 2008b, p. 87). Learners employ them to facilitate learning and make it “more enjoyable, more self-directed, more effective, and more transferable to new situations” (Oxford, 1990, p. 8).

Skill-based strategies: Through using these strategies, which Tarone (1981) called *skill learning strategies*, learners try to become skilled listeners, speakers, readers, and writers. They may also involve strategies related to areas of vocabulary learning and translation.

Function-based strategies: They are related to Oxford’s (1990) taxonomy of strategies based on the function they serve. They include six strategy categories: memory, cognitive, compensation, metacognitive, affective, and social.

Memory strategies: Memory strategies are “techniques specifically tailored to help the learner store new information in memory and retrieve it later” (Oxford & Crookall, 1989, p. 404).

Cognitive strategies: The function of cognitive strategies is “manipulation or transformation of the target language by the learner” (Oxford, 1990, p. 43). For example, the learners apply the tools of practicing, analyzing, summarizing, and receiving and sending messages to handle the learning.

Compensation strategies: They “enable learners to use the new language for either comprehension or production despite limitations in knowledge” (Oxford, 1990, p. 47). In other words, learners use guessing, getting help, and other aids to compensate for the gaps occurred in the learning process.

Metacognitive strategies: They are “actions which go beyond purely cognitive devices, and which provide a way for learners to coordinate their own learning process” (Oxford, 1990, p. 136).

Affective strategies: Through the use of affective strategies “learners can gain control over their emotions, attitudes, motivations, and values” in learning a language (Oxford, 1990, p. 140).

Social strategies: Social strategies are deployed to interact with other people in language learning and in order to increase the exposure to the L2 (Oxford, 1990).

Chapter Two

Introduction



LITERATURE REVIEW

Methodology

Results & Discussion

Conclusion

In this chapter, the concepts of learning styles, learning strategies, and their relationship will be explored, respectively. First, after defining learning styles, delineating their distinguishing features, juxtaposing some models, and talking about criticisms, the relevant studies will be reviewed. In the next section, almost a similar permutation will be offered for learning strategies. Finally, the nature of the association between the two will be described.

A note on terminology mentioned in this chapter is in order. Given the diversity surrounding strategy conceptualizations, different educators have referred to the concept under different labels such as *learning strategies*, *language learning strategies*, *learner strategies*, *language learner strategies*, *self-regulatory strategies*, *strategic behavior*, and a lot more. Throughout this review, and also the whole thesis, these terms are used interchangeably unless a distinction is made. Moreover, the terms *learning* and *acquisition* are treated as synonymous since the distinction between the two is not the focus of this study.

2.1. Introduction

Second or foreign language learning is a complicated task demanding a great deal of effort and perseverance on the learners' part. Despite this natural difficulty, many learners gain a command of the target language quite successfully, but the extent to which this is achieved is not similar across learners. A significant part of this differential success could be ascribed to the different ways in which individual learners go about the task of language learning. This diversity that might determine learners' success or otherwise has come to be known as *individual differences* in language learning.

To date, several aspects of learner variation have been identified. Among them, those related to affective (e.g. motivation, anxiety, self-confidence) and cognitive dimensions (e.g., education, language aptitude, learning strategies) have been reported to be the most frequently investigated ones (Bailey, Onwuegbuzie, & Daley, 2000). Learning strategies, as the specific activities employed to facilitate learning, have attracted researchers' attention since the mid 1970s. Empirical research has revealed that strategy use is a function of a multitude of variables. Put another way, several

individual and situational factors may play a role in the type and frequency of the strategies learners deploy. Among these factors, learners' learning style preferences have been proved to be a significant variable influencing strategy use (Ehrman et al., 2003). Consequently, language learning is optimized if learners are engaged in language activities consistent with their preferred and habitual learning modalities. In such a case, the quality of learners' strategy deployment improves, hence leading to success in the demanding task of second or foreign language learning.

2.2. Learning Styles

Research into learning styles actually began with the proposal made by Witkin (1962) on the account that individuals may take either an analytic predisposition or a more global approach to the processing of information. This led to the introduction of two cognitive dimensions of *field dependence* and *field independence*. Since then, individuals have been viewed from numerous perspectives and, accordingly, a plethora of style dimensions have been offered, making the field a "real quagmire" (Dörnyei, 2005, p. 120). However, the substantial contribution to the language learning of different style dimensions has led educators to pursue this line of research.

2.2.1. Definition of learning styles

Learning style is a more or less consistent way in which an individual processes information. It is defined as "a term that describes the variations among learners in using one or more senses to understand, organize, and retain experience" (Reid, 1987, p. 89). Noting the link between learning styles and other dimensions of behavior, Keefe (1979) regarded the former as "cognitive, affective, and physiological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (p. 4). Reid (1995, p. viii) also described learning styles

simply as “an individual’s natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills.” Kinsella (1995) also believed that learning styles persist irrespective of teaching methods or content area.

To date, a host of style dimensions have been proposed, most of them serving as a dichotomy: *visual* vs. *haptic* (Lewenfeld, 1945), *impulsive* vs. *reflective* (Kagan, 1965), *divergent* vs. *convergent* (Hudson, 1966), *holist* vs. *serialist* (Pask, 1972), *holist* vs. *analytic* (Peters, 1977), *verbalizer* vs. *visualizer* (Richardson, 1977), *leveler* vs. *sharpenner* (Schmeck, 1981), *organizer* vs. *non-organizer* (Atman, 1988), *global* vs. *analytic* (Kirby, 1988), *right-* vs. *left-hemisphere* (Torrance & Rockenstein, 1988), and *ectasis* vs. *synopsis* (Ehrman & Leaver, 2003).

The underlying assumption of exploring such a bewildering array of different learning styles involves the observation that a person learns more effectively when information is presented in a manner that matches his preferred method of acquiring and processing information (Montgomery, 1995). Some people have a predominant learning style, but this does not mean that they cannot function within other styles. However, they do tend to learn more effectively if learning is orientated in accordance to their stronger preference. Thus, learning styles as a model should be regarded only as a guideline and not a strict set of rules. Acknowledging this point, Dunn and Dunn lucidly stated, “Learning style is a biologically and developmentally imposed set of characteristics that make the same teaching method wonderful for some and terrible for others” (1979, p. 3). Put another way, some styles do not have any impact on a student’s learning while others could exert an undeniably powerful influence. Accordingly, the paramount importance of identifying students’ learning styles and matching teaching materials with them so as to achieve the best possible outcome should be born in mind.

2.2.2. Features of learning styles

Ehrman et al. (2003) pointed out that in the literature on learning styles such terms as *learning style*, *cognitive style*, *personality type*, *sensory preference*, and *modality* have been used loosely and often interchangeably. Therefore, it seems wise to take a look at some defining features of learning styles to come to a clearer picture of what the concept includes and what does not.

➤ Learning styles are mostly value-neutral

The concept of learning styles offers a “value-neutral approach for understanding individual differences among linguistically and culturally diverse students” (Kinsella, 1995, p. 171). Curry (1990) also claimed that no one learning style could be considered more advantageous than others. That is, different styles may be equally valid and beneficial and have strengths and weaknesses. Individuals can be successful in every style dimension but only in different ways. The implication of this feature for language teaching and learning is that every individual can learn provided that teachers respond appropriately to the diversity of learner differences including learning styles (Bennett, 2003).

In reality, however, this neutral status does not without exception apply to all style dimensions because some learning styles correlate more highly than others with the desired aspects of language performance in specific settings. As Reid (1995) pointed out, some students with some learning styles clearly function better in a school system that values those learning styles over others.

➤ Learning styles are not black and white elements

Style dimensions have been often presented as two opposing poles on a continuum. They are not either/or elements, however; that is, the existence of one style pole (e.g., *global*) is not necessarily indicative of the absence of its counterpart

(i.e., *analytic*). One might approach a learning task globally and show a relatively slighter analytic preference at the same time. Similarly, a person might be equally visual and auditory but with lesser kinesthetic and tactile involvement, and “not everyone fits neatly into one or another of these categories to the exclusion of the other” (Ehrman & Oxford, 1990, p. 69). Few if any people could be classified as having all or nothing in any of style dimensions (Ehrman, 1996).

➤ *Learning styles are relatively stable but can be also modified*

An individual’s preferred learning styles are “moderately strong habits rather than intractable biological attributes” (Reid, 1987, p. 100), Nonetheless, the possibility of style modification exists; learning styles can be extended to include diverse, and often opposing, preferences (Chapelle & Roberts, 1986; Cohen & Dörnyei, 2002; Nel, 2008; Oxford, 2001b). Ellis (1989) reported that learners in his study abandoned their own preferred learning styles and adjusted themselves to the teaching style they were exposed to. Similarly, researchers recommended that learners should try to adapt themselves to different, especially disfavored, learning styles. Working within multiple learning styles comfortably could maximize learning efficiency (Oxford, 2001b; Reid, 1987).

➤ *Learning styles are different from abilities*

Learning styles differed from abilities on three grounds (Dörnyei, 2005). Firstly, abilities are unipolar (i.e., ranging from ‘little’ to ‘more’) while most styles are bipolar (i.e., forming a continuum between two poles with specific features). Secondly, while for abilities high amounts are always preferable to low amounts, this is not necessarily the case for learning styles, and neither pole of a style continuum is regarded as better per se. To take an example, both ability and learning style affect task performance. The increase in ability is accompanied by improvement in performance whereas its

effect on learning style is dependent upon the nature of the task. In other words, only if a range of different tasks is presented, students at both ends of the style continuum have the chance to succeed (Riding, 2000b).

The third point of divergence between abilities and learning styles concerns their role in cognitive processing (Ellis, 2004; Messick, 1994). Abilities are related to the *content* and *level* of cognition (*What?* and *How much?*) while styles refer to the *manner* or *mode* of cognition (*How?*). For example, more intelligent people produce better works (i.e., due to their ability), but some people prefer to process information by means of visual input, and others prefer auditory input (i.e., due to their learning style).

➤ *Learning styles are different from cognitive styles*

As mentioned earlier, although the notions of learning and cognitive styles are not the same, they have been often used interchangeably. As some researchers argued (e.g., H. D. Brown, 2000; Dörnyei, 2005), the core of a learning style is the cognitive style, which can be regarded as a partially biologically determined and consistent way of responding to information and situations. When such cognitive styles are specifically related to an educational context and are interwoven with a number of affective, physiological, and behavioral factors, they are more generally referred to as learning styles. Dörnyei and Skehan (2003, p. 602) recognized the distinction as follows:

The former [i.e., cognitive styles] can be defined as a predisposition to process information in a characteristic manner while the latter [i.e., learning styles] can be defined as a typical preference for approaching learning in general. The former, in other words, is more restricted to information-processing preferences, while the latter embraces all aspects of learning.

➤ *Learning styles are different from learning strategies*

According to Reid (1998), learning styles are “*internally* based characteristics, often not perceived or consciously used by learners” whereas learning strategies are “*external* skills often used consciously by students to improve their learning” (p. ix, emphasis is original). This degree of consciousness in applying styles and strategies has been also voiced by Sternberg and Grigorenko (2001) when they observed that styles operate without individual awareness whereas strategies involve a conscious choice of alternatives. Another difference is that styles are fairly fixed for an individual due to their physiological basis while strategies could be more easily learned, developed, and modified (Oxford, 1990; Riding 2000a).

➤ *Some learning styles are strongly related to personality*

Some psychological constructs are sometimes referred to as learning styles and sometimes as personality dimensions. For example, within the domain of psychology, the *extroversion-introversion* is considered a personality type dichotomy. In L2 studies, they are, nevertheless, regarded as learning styles (Bailey et al., 2000; Ehrman, 1996). This may be, in part, due to the increasing influence of personality variables on learning styles reflected in the use of the *Myers-Briggs Type Indicator* (MBTI). Accordingly, Ehrman (1996) categorized certain learning styles as *personality-based learning styles*, which are actually personality dimensions that have strong learning or cognitive style correlates.

Dörnyei (2005) attributed this to the nature of some personality types and argued that such dimensions, as those on the MBTI, are not like traditional scales ranging from positive to negative. Rather, “they indicate various aspects of one’s psychological set-up and, depending on their combinations, every type can have positive or negative effects in a specific life domain” (p. 19). This value-neutral

feature is very similar to that of style dimensions in that an individual can be successful in every style position, though in a different way.

➤ *Learning styles might be context-dependant*

Studies have shown that the way information is perceived, processed, and stored varies from one individual to another and is influenced by heredity, environment, and past experiences. Reid (1987) claimed that different modes of thinking, including learning styles, are often characteristic of different cultures. In her study, learners from diverse cultural backgrounds indicated differential patterns of perceptual styles preferences. This point was also confirmed by several other educators (e.g., Hofstede, 1986; Oxford, 1990; Reid, 1995, 1998; Rossi-Le, 1989, 1995; Tyacke, 1998).

Naraghi Zadeh (2004) reported that Iranian learners had unique learning approaches. They tended to combine and try almost all available learning orientations. She ascribed this tendency to the Iranian learning culture that is based on a philosophy of life to be perfect.

Moreover, learning styles may differ by other factors such as age and gender. Learning preferences may change over time as they are developmental and alter with maturity. This could be due to motivational levels, responsibility, and the fact that for many people visual and auditory perceptual elements strengthen with age. In both children and adults, one of the perceptual styles (auditory, visual, tactile, or kinesthetic) is usually more dominant than the others, influencing the way in which information is received. Regarding gender, the perceptual strengths of males tend to be visual, tactile, and kinesthetic while females tend to be more auditory. As for sociological styles, females usually outdo males in terms of group learning; that is, they favor group work due to their stronger tendencies for social interaction (Dybvig, 2004).

➤ *Learning style might conflict with many learning aspects*

Ehrman (1996) argued that “learning style mismatches are at the root of many learning difficulties” (p. 50). She outlined the main mismatches between students’ learning styles and a number of different areas. The learners’ preferred learning style may come into conflict with the teacher’s teaching style (referred to as *style war*, Oxford, Ehrman, & Lavine, 1991), the syllabus, the language task, the students’ beliefs about learning, and/or the learning strategies deployed.

Most of these mismatches could not be easily avoided because of the wide diversity of teachers and students in terms of their teaching and learning styles, respectively. Peacock (2001b), having observed an instance of style war, suggested that teachers should adopt a balanced teaching style in which no one learning style is excessively favored or, alternatively, try to accommodate a number of learning styles at the same time.

However, there are some recommendations to at least minimize the conflicting effects of different learning styles. One is to accommodate the learning tasks in a way that they are geared to the learners’ common learning style preferences. Nevertheless, the problem is that learners are rarely homogeneous in their style preferences. Another option for both students and the teacher is to identify their major learning styles prior to the learning program. This awareness could be beneficial and bring about some style harmony (Kinsella, 1995; Oxford & N. J. Anderson, 1995).

Still another option is for the teacher to help learners stretch beyond their comfort zone of preferred learning styles (Oxford, 2001b). As learners become aware of their learning style preferences, they start to function within their comfort zones and may gradually stretch them out of this zone (Ehrman, 1996). Also referred to as *style flex* (Kroonenberg, 1995), this style stretching can be achieved over time by providing a

learner with a language activity requiring a learning style disfavored by him. For example, a visual student participates in a task that involves receiving auditory input (e.g., from a tape). Or, offering an analytic learner with a learning material that does not cover grammar systematically (Dörnyei, 2005).

Finally, teaching students learning strategies that would match their styles is another useful way to minimize possible mismatches. This approach will be discussed in section 2.4.1.

2.2.3. Style models and dimensions

Models of cognitive and learning styles abound. Each of these models further generates diverse, and often overlapping, style dimensions. Claiming that there is a composite of at least 20 style dimensions, Oxford and N. J. Anderson (1995) singled out eight of them as particularly important for L2 learning:

- visual vs. auditory vs. hands-on (or tactile/kinesthetic)
- intuitive-random vs. concrete-sequential
- field dependent vs. field independent
- extroverted vs. introverted
- judging vs. perceiving
- impulsive vs. reflective
- feeling vs. thinking
- global vs. analytic

Curry (1983) regarded individuals' learning differences as a metaphorical onion consisting of four layers. The outermost layer, *instructional and environmental preferences*, includes those individuals' traits that are most observable, open to introspection, context-bound, and susceptible to change. They are basically perceptual modalities. Models on sensory modalities such as Reid's (1987) *perceptual preferences* include features working within this layer. The second layer, *social*

interaction models, deals with the differences related to gender, age, or maturation levels. The third layer, *information processing preferences*, involves the processes by which information is absorbed, organized, stored, and utilized. Models such as Kolb's (1984) *experiential learning approach* could be regarded as functioning within this layer.

Finally, the innermost layer, *personality dimension*, relates to a relatively permanent and consistent facet of personality "apparent only when an individual's behavior is observed across many different learning situations" (Riding & Cheema, 1991, p. 195). The assumption is that our deepest personality traits shape our perceptions and orientations as to how we interact with others. A popular model in this category is the one on *personality types* proposed by Myers and Briggs (1976).

field dependent vs. field independent

One of the major distinctions in cognitive styles that has been incorporated in most style models is the one between *field dependent* and *field independent*. Proposed by Witkin (1962), the distinction was originally associated with visual perception. People could be categorized in terms of the extent to which they are "dependent on the structure of the prevailing visual field...[or] are free or independent of the influence of the whole field when they look at the parts" (Dörnyei, 2005, p. 136). Witkin (1962; see also Witkin, Goodenough, & Oltman, 1979) developed this distinction between an analytic predisposition to the processing of information as contrasted with a more global approach. Field dependents are more likely to deal with information structures as a whole. In contrast, field independents tend to analyze information into its component parts and to distinguish the essential from the inessential. In other words, field dependent learners prefer to learn in context and

holistically whereas field independent learners learn more effectively step by step, beginning with analyzing facts and proceeding to ideas. Field dependents are sociable and work well in groups while field independents are viewed as aloof, preferring to find solutions to problems for themselves. The former is likely to engage in communicative language use, but the latter is associated with a capacity to analyze linguistic material and perhaps learn systematically.

The *Group Embedded Figures Test* (GEFT) was also developed to measure these constructs. The test contains some simple forms that have been hidden in more complex geometric forms. The subject's task is to locate these simple forms.

a model of cognitive style

Riding and Cheema (1991; see also Riding, 2000a, 2000b) proposed a style system consisting of two distinct style dimensions: *holist-analytic* and *verbal-imagery*. The first dimension concerns whether individuals prefer to approach information as a whole or in discrete parts of that whole. As the term suggests, holists tend to deal with the situation as a whole, resist breaking it down into smaller sections, and prefer to take over an overall perspective of the context. Analytic individuals, in contrast, look for components and patterns in the situation and like to analyze it into subsections. They also prefer to formulate rules and impose a structure on the situation in order that they could work better. They are good at detecting similarities and differences (Riding, 2000a).

Both holists and analytics may deal with a problem verbally or visually. *Verbal-imagery* style dimension refers to whether individuals are willing to represent information during thinking verbally or whether they are more inward and prefer to think in mental pictures (Dörnyei, 2005). In other words, verbalizers understand and

retain new material best when they can discuss either the subject they are learning or the information presented during a meeting or a lecture. They remember more when they can express themselves and engage in verbalizing through discussions. Imagery, in contrast, understand and remember best by reading the written words. When they close their eyes, they tend to recall information by seeing the words on the page in their mind. They also find it easier to remember what they hear in meetings, presentations, or lectures when handouts are used with graphics.

These two dimensions (i.e., holist-analytic and verbal-imagery) are further subdivided into some learning style dichotomies. The holist-analytic dimension, for example, includes such learning styles as field dependence-field independence and *adaptors-innovators*. The latter distinction refers to the way we approach a task. Adaptors prefer conventional, established procedures whereas innovators favor restructuring or new perspectives in problem solving. Riding's taxonomy of styles has been also reflected in the *Cognitive Styles Analysis* (CSA, 1991) questionnaire, which is also available in a computer-based version.

experiential learning style model

Kolb (1984; see also Kolb, Boyatzis, & Mainemelis, 2001) drew on the work of the Swiss psychologist Carl Gustav Jung who viewed learning styles as a result of individuals' preferred ways of adapting in the world. The model consists of distinct learning styles based on a four-stage learning cycle. These stages include *concrete experience*, *reflective observation*, *abstract conceptualization*, and *active experimentation*. The model is working based on the logic that immediate concrete experiences provide the learner with a starting point for observations and reflections.

As these are understood and assimilated, they can be applied to abstract concepts that can be further tested in new situations.

In other words, learning starts with concrete experience as a learner's exposure to the real world provides a basic for other modes of thinking. The learner, then, observes systematically and reflects upon the observation to establish generalizations. Afterwards, based on the reflection, he theorizes at an abstract level. This theorizing enables the whole experience to be understood completely. It also provokes further questions for whose answers a new cycle would be set in motion (Skehan, 1998). As applied to language learning, this cycle was vividly exemplified by Dörnyei and Skehan (2003) as follows:

One could consider the CE stage [i.e., concrete experience] to represent exposure to input, which would be followed by observation and reflection (RO) [i.e., reflective observation]. If we were dealing with the past tense form in English, this could be the noticing of the existence of a wide range of past tense forms indicated by the morphological “-ed” ending. This observation and tentative generalization might lead to the conceptualization that the past tense in English is invariably formed in this way (AC) [i.e., abstract conceptualization]. Then, the conceptualization, reflecting its tentative status, might provoke the learner to choose to use this form for the past tense while observing the reactions of others (AE) [i.e., active experimentation]. In other words, the learner would come back to concrete experience having transformed this experience in some way, with the result that the experience itself would be different. In this case, highly idealized as it is, the learner might overuse the regular past, and then, at a later RO stage, reflect on the consistently raised eyebrows that its application to verbs such as “go” or “give” had provoked. This, in turn, might lead to a new conceptualization of past tense formation, and so on. (pp. 605-606)

According to Kolb's model, learning style is a product of two opposing dimensions represented as two continua: *perception* and *processing* (Dörnyei, 2005). The first relates to how we perceive and grasp experiences and ranges from concrete experience to abstract conceptualization. The second concerns how we approach,

process, and transform experiences and ranges from reflective observation to active experimentation. The combinations of these two modes make four learning style groups (viz., *converger*, *diverger*, *assimilator*, and *accommodator*, see Table 2.1).

Table 2.1. Kolb's Experiential Learning Style Dimensions

Style Dimension	Description
Converging ▼ Abstract Conceptualization + Active Experimentation	<ul style="list-style-type: none"> ▶ strong in practical application of ideas ▶ can focus on specific problems ▶ has narrow interests ▶ unemotional
Diverging ▼ Concrete experience + Reflective Observation	<ul style="list-style-type: none"> ▶ sees things from different perspectives ▶ strong in imaginative ability ▶ good at generating ideas ▶ broad cultural interests
Assimilating ▼ Abstract Conceptualization + Reflective Observation	<ul style="list-style-type: none"> ▶ strong ability to create theoretical models ▶ excels in formal learning situations ▶ concerned with abstract concepts ▶ excels in inductive reasoning
Accommodating ▼ Concrete Experience + Active Experimentation	<ul style="list-style-type: none"> ▶ good at reacting to immediate situations ▶ greatest strength is doing things ▶ solves problems intuitively ▶ more of a risk taker

Note. Adapted from M. Smith (2001).

As viewed in Table 2.1, the style dimensions have been recently renamed to *converging*, *diverging*, *assimilating*, and *accommodating* (Kolb, 2000). They were also reflected in Kolb's (1984, 1999) *Learning Style Inventory*.

perceptual or sensory style preferences

Sensory, perceptual, or physiological preferences are primarily related to how we take in information and include four areas: *visual*, *auditory*, *kinesthetic* (movement-oriented), and *tactile* (touch-oriented). They are based on the work in the early 1970s by Dunn and Dunn (1972) and Dunn, Dunn, and Price (1978) in the general area of

education, rather than in English as a second language (ESL) domain. They have been reflected in many models of learning style in one way or another. Such preferences are related to the perceptual learning channels with which individuals are mostly comfortable. They are more accessible as they relate to the observable actions of learning, and are, consequently, easier to operationalize (Dunn & Dunn, 1979).

According to these preferences, people use all four channels to receive information, but one or more of these can be dominant. Clark (2000) stated that learners might prefer one style for a particular task and another for a different task. Based on the biological aspects, Winebrenner (1996) also made a distinction between visual and tactile/kinesthetic learners as contrasted with auditory learners. The former are more global thinkers and may run into problems as they are not good with logical, analytical and sequential tasks unless they can see the ‘big picture.’ On the other hand, auditory learners are logical, analytical, and sequential thinkers. This type of learners may be most successful in traditional classrooms since their style is accommodated in most school tasks. What follows concerns the main characteristics of learners with dominance in each of the perceptual preferences:

Visual. Visual learners learn well from seeing words in books, on the chalkboard, and in workbooks. These learners grasp information most effectively if provided through the visual channel. They remember and understand information and instructions better if they read them. They prefer reading tasks and often use colorful highlighting schemes to make certain information visually more salient. Visual learners favor visual media such as films and videos. In lectures, their understanding is considerably increased by a handout, aids such as overhead transparencies, or by taking extensive notes (Dörnyei, 2005).

Auditory. Auditory learners predominantly learn from hearing words spoken and from oral explanation and other sources of auditory input such as lectures or audiotapes. They may remember information by reading aloud or by moving their lips as they read. Their learning is enhanced if they engage in discussions and group work (Dörnyei, 2005). They could also gain benefit from making tapes to listen to, by teaching other students, and by conversing with their teacher (Reid, 1987).

Kinesthetic. Kinesthetic learners learn best by being physically involved in classroom experiences. They remember information well when they actively participate in activities and role-playing in the classroom. A combination of stimuli (e.g., an audiotape combined with an activity) will help them understand new material better. However, they need frequent breaks; sitting motionless for hours is usually difficult for them. They often tend to walk around while, for example, trying to memorize something (Dörnyei, 2005).

Tactile. As a learning style, tactile differs from kinesthetic in that it involves touching and manipulation of objects while the latter concerns whole-body movement and involvement (Dörnyei, 2005). Tactile learners prefer a hands-on and touching learning approach. Writing notes or instructions can help them remember information better. They enjoy making posters, collages, and the like. Working with flashcards, handling and building models, conducting a laboratory experiment, and touching and working with new materials are among their favorites.

Reid (1987) developed the *Perceptual Learning Style Preference Questionnaire* (PLSPQ) based on the extant research on the aforementioned sensory modalities (especially drawing on the work done by the Dunns and associates). To better apply the framework to L2 learning classrooms, she added two *sociological* or *social* styles:

Individual. Those students with a strong individual learning style preference learn best when they work alone. They think better when they study alone. They also understand material best when they learn it alone and make better progress in learning when they work by themselves.

Group. In sharp contrast to individual learners, those preferring group learning style learn more easily when they study with at least one other student. They tend to be more successful when they work cooperatively with others. They value group interaction and class work with other students. The stimulation they receive from group work helps them learn and understand new information better.

a model of personality type

Myers and her daughter (Myers & Briggs, 1976) classified learning styles in accordance to personality types based on Carl Gustav Jung's theory of *psychological types*. There are four basic dimensions to the model: *extroversion-introversion*, *sensing-intuiting*, *thinking-feeling*, and *judging-perceiving*. Originally, Jung offered the first three dimensions, and the last one was added by Myers and Briggs. Jung's initial typology has survived because it seems to offer insights into some basic truths about the structure of personality (Dörnyei, 2005). What follows concerns the main features of each of these personality types:

Extroversion vs. Introversion. Extroverts gain their energy from the outer world. They seek interaction with people and have many friendships. In contrast, introverts derive their energy from the internal world. They are reflective thinkers and would rather think than talk. They seek solitude and tend to have just a few, and often very deep, friendships (Oxford, 2001b).

Sensing vs. Intuiting. Sensing people are detail-orientated and rely on their senses to perceive the world. They prefer organized, linear, and structured lectures. They like facts rather than theories, want guidance and specific instructions from the teacher, and look for consistency. Intuiting people, on the other hand, rely on their hunches. They look for patterns and relationships in the information presented. They also like to create theories and new possibilities, often have sudden insights, and prefer to guide their own learning.

Thinking vs. Feeling. Thinkers make decisions based on logic and rules. They rarely allow emotions to cloud their decisions. Conversely, feelers tend to make decisions on personal and humanistic considerations. They value empathy and harmony and often show them through words, not just behaviors (Oxford, 2001b).

Judging vs. Perceiving. Judging or *closure-oriented* people are decisive and focus on completing a task. They are only concerned with what is essential and may be at times hasty in taking action. On the contrary, perceivers or *open* individuals are curious, adaptable, and spontaneous. They may start a task but often find it difficult to complete it.

Based on this model, the MBTI was constructed, which is the most widely used personality test in the world. The permutations of the preferences on the MBTI result in 16 different personality types, usually indicated by a four-letter label. For example, ESFP refers to the Extroversion-Sensing-Feeling-Perceiving personality type. All resulting personality types appear to be valid since they are more than the sum of the parts (Ehrman, 1996).

Ehrman and Leaver model

Recently, Ehrman and Leaver (2003) proposed an elaborate model of cognitive styles in the service of language learning featured by detailed theoretical underpinnings. Supported by an extensive empirical body of research, the *Ehrman and Leaver model* (E&L) has undergone extensive validation. According to the researchers' conceptualization, the model consists of two superordinate style dimensions: *ectasis* and *synopsis*. The distinction between these two addresses the degree of conscious control of learning desired or needed. The former refers to those learners who need or want conscious control over the learning process while the latter leaves more to preconscious or unconscious processing. In other words, ectasis "seeks conscious control of processing and thus may result in perception of phenomena as composites" whereas synopsis "relies on unconscious or preconscious and thus may result in perception of phenomena as wholes" (Ehrman & Leaver, 2003, p. 404). Each of these constructs subsumes ten subscales or style dichotomies (see Table 2.2 on the next page).

Among these dichotomies, a rather novel distinction is the one between *analog* and *digital* learners. Analog learners prefer stories, parables, analogies, and metaphors and tend to use such deep strategies as association and elaboration. In contrast, digital learners want to hear it as it is and without what may seem like extraneous or fanciful embellishment. They rely mostly on surface strategies like memorizing or word lists.

To make their model operational, Ehrman and Leaver (2003; see also Ehrman, 2001) developed a questionnaire, consisting of three items for each of the ten dichotomies. The instrument has undergone extensive validation at the Foreign Service Institute in the US for several years.

Table 2.2. The E&L Subscale Definitions

Synopsis	Ectasis
<p>Field sensitivity as learning style: prefers to address material as part of context and often picks up material by ‘osmosis.’ It relates to everything-foreground and background together and can be compared to illumination by a floodlight that shows the whole scene.</p>	<p>Field insensitivity: makes little or no use of the whole context and often excludes ‘incidental’ learning.</p>
<p>Field independence as learning style: prefers to separate what is considered important from context, setting priorities and hierarchies. It can be compared to a spotlight that focuses sharply on one thing, in contrast to field sensitivity.</p>	<p>Field dependence: treats foreground and background as the same and does not select out what is important for focus.</p>
<p>Random (non-linear): follow internally developed order of processing that may appear “random” to others.</p>	<p>Sequential (linear): follows externally provided order of processing, such as that in a textbook.</p>
<p>Global: attends to gestalts and ‘big picture,’ is aware of ‘forests’ (vs. trees), oriented toward processing from the ‘top down.’</p>	<p>Particular: attends to discrete items and details, is aware of ‘trees’ (vs. forests), oriented towards processing from ‘bottom up.’</p>
<p>Inductive: goes from specific to the general, generalizes from experience, and begins with examples rather than rules or theories.</p>	<p>Deductive: goes from the general to specific, applies generalizations to experience, starts with rules, theories rather than specific examples.</p>
<p>Synthetic: comprehends through assembly of components into a constructed whole; creates.</p>	<p>Analytic: comprehends through understanding componential structure; disassembles.</p>
<p>Analog: qualitative or metaphoric approach to interpreting experience; an analog clock represents time metaphorically through a circular image.</p>	<p>Digital: quantitative or literal approach to interpreting experience; a digital clock shows only numbers directly, not representing them as a metaphor.</p>
<p>Concrete: interacts with the world directly, learns through application, often physical, of knowledge. Experiential.</p>	<p>Abstract: interacts with the world through cognitive constructs, learns from formal rendition of knowledge. Theoretical.</p>
<p>Leveler: often does not notice disparities and may seek to reduce them; looks for similarities.</p>	<p>Sharpeners: notices disparities and differences and seeks to explore and account for them.</p>
<p>Impulsive: reacts quickly in acting or speaking with little or no conscious ‘thinking it through;’ acts on ‘gut;’ thought often follows action.</p>	<p>Reflective: ‘thinks it through’ before action; often does not trust ‘gut reaction;’ action usually follows thought.</p>

Note. Adapted from Ehrman & Leaver (2003).

2.2.4. Evaluation of style models

As noted, different authors have proposed and labeled their own system of learning or cognitive styles, leading to numerous style dimensions. Among the presented models, Riding and Cheema's (1991), as a purely cognitive style system, introduced two essential style dimensions. Empirical research testing the model has revealed that the dimensions are independent of one another and are also independent of, but interacting with, personality (Riding, 2000a). This is a model of choice for many researchers, especially in psychology. Furthermore, the provision of an easy-to-use computer-based version of the questionnaire measuring this model has added to its currency.

As for Kolb's (1984) model, it has gained acceptance as part of Kolb's broader experiential learning theory by researchers and practitioners alike (Dörnyei, 2005). Nevertheless, some learning style researchers has cast doubt on the validity of its underlying assumption in that the idea of a learning cycle is considered to be flawed, especially in the sense that it is closed (Greenaway, 2006).

The model offered by Myers and Briggs (1976) is mainly a personality model, which is very popular in L2 studies. However, different personality dimensions could play a significant role in determining our learning styles (see also section 2.2.2). The model has links with other models, especially with Kolb's in that they both drew on the work done by Jung. Although the research in the area of personality type seems tempting, Ehrman (2008) warned that teachers should exercise caution when labeling learners different personality types because "[they] should remember that statistics do not predict individual achievement: they only suggest probabilities and directions for assisting those who may not have natural predilections that promote high level of

language learning” (p. 69). This assertion appears to hold true and needs to be accounted for in most aspects of second or foreign language teaching and learning.

The E&L model is the most comprehensive and parsimonious model since it integrates a number of influential and well-established style dimensions under two novel superordinate constructs (Dörnyei, 2005). Among all the models presented, it is the one holding great promise for the future of cognitive and learning styles.

Reid (1995) divided learning styles into three major categories: *cognitive learning styles*, *personality learning styles*, and *sensory learning styles*. Her classification subsumed some of the key dimensions in the models presented in the previous section. Cognitive learning styles, for example, include field independent-field dependent, analytic-global, and reflective-impulsive. Personality learning styles refer to those dimensions presented by Myers and Briggs (1976).

Sensory learning styles in Reid’s (1995) taxonomy are subdivided into two categories: *perceptual learning styles* and *environmental learning styles*. The former includes auditory, visual, tactile, and kinesthetic learning. In the category of environmental learning styles, there is a distinction between *physical* and *sociological* aspects. The first dimension refers to those who learn more effectively when variables such as temperature, sound, light, food, time, and classroom arrangement are considered. Sociological learners, in contrast, learn more effectively when variables such as group, individual, pair, and teamwork, and level of teacher authority are taken into account.

All in all, it is not uncommon in the field of cognitive and learning styles to come across dimensions repeated across different models. For example, Riding and Cheema’s dichotomy of holist-analytic borrowed Witkin’s field dependence-field independence. The dichotomy was, in turn, incorporated in subsequent systems like

the E&L. Similarly, kinesthetic and tactile learning style preferences were merged to form *haptic* learning style (O'Brain, 1990). However, that several models have some dimensions in common while claiming to measure them differently (as the empirical research often supports) might suggest individuals' subtle nuances of personality that could, and should, be looked upon from almost endless angles.

2.2.5. Criticisms against learning styles

“Do learning styles really exist?” asked Dörnyei (2005) as he argued that the area is a “real quagmire” in that there exists a “confusing plethora of labels and style dimensions” (p. 120). By the same token, Curry's (1983) metaphorical onion clearly shows how multifaceted the learning style concept is as he later pointed out that “there is a bewildering confusion of definitions surrounding learning style conceptualizations” (1991, p. 249). Generally, the criticisms leveled at the whole field could be viewed from two perspectives. The first one concerns the constructs, especially those of field dependence and field independence. The second is related to the measurement issues.

As one of the first distinctions in the field, field dependence-field independence has come under severe criticisms so much so that some educators disregard any role for these constructs. Ellis (1994), for example, stated that the research into the relationship between these dimensions and L2 learning “has shed little light” (p. 506). Moreover, in most studies only a low correlation between field dependence-field independence and language learning achievement was detected. Some critics have concluded that the distinction has failed to generate robust and impressive findings because it does not translate well to the language domain. They also claimed that the constructs correlate excessively with intelligence because when the scores on the

latter measure were controlled for, the correlation indexes were lowered, resulting in “the allegation that the [field dependence-field independence] interpretation of cognitive style is simply a disguised measure of intelligence” (Dörnyei & Skehan, 2003, p. 603).

On the other hand, Chapelle (1992) argued that the relationship between field dependence-field independence and second language learning has a logical foundation, and this could be illustrated through careful examination of its evaluational results. In addition, the appearance of these constructs in the recent models of cognitive styles (e.g., Ehrman & Leaver, 2003) indicates that the distinction is still worthy of further attention.

If we brush aside the criticisms over the constructs in the field, the way these constructs are measured has also remained a contentious issue. Accordingly, Ellis (2004) ascribed the partial failure of research on field dependence-field independence to the measurement of the constructs and the methodological design of the studies rather than the constructs themselves. A widely used measurement for assessing these two constructs is the GEFT. The construct validity of this instrument has been called into question as it merely relies on a visual interpretation of style (Dörnyei & Skehan, 2003). Another problem with the GEFT is that it is actually a measure of field independence; in other words, subjects who score high on the GEFT are considered field independent, and those scoring low are considered field dependent as there exists no direct measure for the latter. This runs contrary to one of the features of most cognitive and learning styles that they are not yes/no options, and the absence of one style does not indicate the presence of its counterpart (see also section 2.2.2). Moreover, the results of empirical studies revealed that significant positive correlations were always in favor of the field independence despite the claims that

each different style has its own advantages. H. D. Brown (1993) tried to resolve this problem by claiming that although a high score on the GEFT indicates field independence, a low score does not necessarily imply relatively high field dependence. He also argued that field dependence and field independence are not in complementary distribution, and students might exercise both in different situations.

As Dörnyei and Skehan (2003) asserted, the pitfalls in the measurement of learning styles have improved considerably over the years. For example, the analytic-holistic dimension of style on Riding's (1991) CSA questionnaire could be regarded as an adequate substitute for the GEFT. Practically, it is possible to score highly on each pole of each dimension, so that, unlike with the GEFT, a holistic style is not simply the absence of an analytic style. This implies that it is also possible to have low scores on each dimension, suggesting that someone can be 'low' in style options.

There also exist two measures of the perceptual style preferences including Reid's (1987) PLSPQ and the perceptual component on Oxford's (1993) *Style Analysis Survey* (SAS). The former, as the instrument used in the current study, has recently come under attack, and there have been a number of studies to shed more light on the validity of its underlying constructs. In a series of studies (DeCapua & Wintergerst, 2005; Wintergerst, DeCapua, & Itzen, 2001; Wintergerst, DeCapua, & Verna, 2003), the PLSPQ underwent exploratory factor analyses. The results raised doubt as to the validity of the questionnaire. The authors claimed that the visual and auditory subscales were not adequately accounted for and offered an alternative three-factor model. Accordingly, they excluded some items on the original questionnaire and regrouped the remaining items under three headings: *Group Activity Orientation*, *Individual Activity Orientation*, and *Project Orientation*. This latter subscale included items on both kinesthetic and tactile subscales. The new instrument was called the

Learning Style Indicator (LSI). Later studies (e.g., DeCapua & Wintergerst, 2005), which led to the deletion of some other items, provided further evidence for the construct validity of the new questionnaire.

In the same vein, Isemonger and Sheppard (2007) applied a confirmatory factor analysis to examine whether the six-component structure of the PLSPQ, hypothesized by Reid (1978), was held. The finding rejected Reid's model; that is, the existing model covering visual, auditory, kinesthetic, tactile, individual, and group constructs was not supported. A subsequent exploratory factor analysis led the authors to propose a three-factor model including *Social Learning*, *Private Learning*, and *Haptic Learning*. The haptic construct covered all items on kinesthetic and tactile subscales.

It is worth mentioning that Isemonger and Watanabe (2007) also cast doubt on the validity of the perceptual component of Oxford's (1993) SAS. However, in their concluding remarks, the authors aptly stated that "these results pertain to the scores derived in this particular administration of the instrument and *are not a final judgment* [italics added] on the perceptual component of the SAS" (p. 143). As for the PLSPQ, the same appears to be true.

In sum, as the main line of criticism against learning styles revolves around the confusion over precise definitions, and, accordingly, the measurement problems, Dörnyei (2005) 'honestly' responded to the question he had asked at the beginning of this section:

The honest answer, I believe, is that we are not absolutely sure. We still do not know enough about the exact psychological mechanisms that make up the process that we usually conveniently refer to as 'learning' to be able to say that learning styles have definite neuropsychological validity and relevance to this process. The problem is that learning—and consequently the related concept of learning styles—is associated at the same time with perception, cognition, affect, and behavior, and a term that cuts across these psychologically distinct categories does not lend itself to rigorous definition. (p.124)

2.2.6. Studies pertaining to learning styles

Tyacke (1998) pointed to several problems encountered while identifying learning styles. The first refers to the complex nature of learning styles that makes it difficult to analyze learners' overall learning profiles. Another problem is that learners are likely to use different learning styles in different learning contexts. The third problem is related to the methodology that might be biased. In other words, it might be in favor of one kind of learner over another (e.g., analytic over holistic). Nevertheless, despite these problems, Reid (1987) argued that "most students do correctly identify their learning strengths, particularly when an element is strongly preferred or rejected (p. 90).

This review is restricted to perceptual and sociological preferences, the focus of this study, preceded by a very brief account of field dependence-field independence distinction because it served as the initial line of research in the field.

studies on field dependence-field independence

Field dependence-field independence distinction has received a considerable amount of attention in L2 studies. H. D. Brown (1993) argued for two main hypotheses regarding the relationship of these constructs and L2 learning. Firstly, field dependent learners will be relatively more successful in learning the communicative aspects of language due to their empathy, social outreach, and the perception of other people. Confirming this hypothesis, Johnson, Prior, and Artuso (2000) reported that field dependents outdid field independents on L2 tasks that emphasized communicative rather than formal aspects of language proficiency.

The second hypothesis proposed by H. D. Brown (1993) is that field independence is closely associated with classroom learning that involves analysis, attention to details, and mastering of drills and other focused activities. Results of several studies

were in favor of field independent as almost always the preferable style in formal learning since the learners functioning within this style appear to be better at separating the essential from the inessential, selectively channeling attention, and noticing important aspects of language (Dörnyei, 2005; Sternberg & Grigorenko, 2001).

While the contribution to L2 learning of the constructs seems tempting, Ellis (2004), in a review of the two stated hypotheses, concluded:

Two hypotheses have been advanced regarding L2 learning. The first is that field-dependent learners will do better in informal language learning because of their greater interpersonal skills. The second is that field-independent learners will be advantaged in more formal learning because of their enhanced analytic skills. Early studies, based on the GEFT..., produced no clear support for the first hypothesis and only weak support for the second. They showed that measures of field independence (there being no separate measure of field dependence) correlated weakly, often non-significantly, with measures of communicative language use and performance on discrete-item tests. (p. 535)

studies on perceptual and sociological style preferences

Most of the studies into L2 learners' perceptual leaning style preferences employed Reid's (1987) PLSPQ. The instrument yields scores on four perceptual preferences (viz., visual, auditory, kinesthetic, and tactile) and two sociological preferences (viz., individual and group). The scores are, then, categorized as *major*, *minor*, or *negligible (negative)* learning style. Major is the most preferred learning style, minor is the one in which learners can still function, and negligible or negative means that they may have difficulty learning in that way.

Reid (1987) could be regarded as the first one measuring sensory preferences in L2 field. She surveyed a sample of ESL learners and native English speakers to explore their perceptual and sociological learning style preferences with respect to a number of variables including the students' age and gender, their scores on test of

English as a foreign language (TOEFL), the length of time spent in the US, the major field of study, and whether they were graduate or undergraduate students. The participants represented 98 countries, 29 major fields of study, and 52 language backgrounds. The overall result of Reid's study showed that ESL learners strongly preferred kinesthetic and tactile learning styles. Most groups, on the other hand, showed a negative preference for group learning. Other findings of this impressive study could be summarized as follows:

1. ESL learners' learning styles significantly differed in several ways from native speakers of English. Native speakers of English were less tactile in their learning style preferences. In addition, they were significantly less kinesthetic than all non-native speakers.
2. ESL learners' learning styles from different cultural backgrounds sometimes differed significantly from each other. For instance, Japanese learners, on the other hand, appeared to be the least auditory of all learners and were significantly less auditory than Arabic and Chinese learners. Among all the non-native speaker language groups, Japanese speakers were significantly different in their preferences, not showing a single major learning style. Arabic, Chinese, and Korean students appeared to have multiple major learning style preferences. Spanish chose kinesthetic and tactile as major learning styles and group learning as a negative style.
3. Reid did not find as many significant differences as anticipated with respect to major field. Among students of all majors, kinesthetic learning was a major learning style preference. Except for those in hard sciences, students in all fields chose individual learning as a minor learning style. In addition, group learning was proved a negative learning style in all major fields except for computer science. Visual learning was selected as a major learning style only by students in hard sciences. Humanities majors were the least oriented toward visual learning. They were also significantly less tactile when compared to engineering and computer science majors. Furthermore, students in four major fields (viz., computer science, hard sciences, business, and medicine) strongly preferred auditory learning as a major learning style.
4. As for level of education, graduate students preferred visual and tactile learning. Undergraduate participants were, in contrast, more auditory than their graduate counterparts. Both groups strongly tended to learn kinesthetically and tactilely.
5. Males favored visual and tactile learning significantly more than females.

6. No significant difference was found in terms of age. However, a trend was observed: “The older the student, the higher the preference means for visual, auditory, kinesthetic, and tactile learning” (p. 95).
7. No significant difference was found in terms of TOEFL score. However, the pattern of learning styles preferences among students with higher TOEFL scores was similar to that of native speakers of English.
8. The results also revealed that as ESL learners adapted to the US academic environment, some changes and extensions of learning styles might take place. For example, the longer the students had lived in the US, the more auditory their preference became. Learners who had been in the US more than three years were significantly more auditory in their learning style than those who had been in the US for shorter periods of time. Therefore, it could be suggested that learners adapt their learning style preferences to the learning environment in which they are involved.

Rossi-Le (1989) explored the relationship between perceptual learning styles and learning strategies among 147 adult immigrants studying English in community college settings. Regarding the learning styles, several findings similar to those observed in Reid’s (1987) study were reported. For instance, the participants showed a strong preference for tactile and kinesthetic learning styles. With respect to gender, male subjects significantly preferred tactile learning compared to females.

In a study of 331 Chinese university students, Melton (1990) reported that kinesthetic, tactile, and individual styles were favored by the participants, and group learning was chosen as minor learning style. Moreover, humanities students preferred kinesthetic and individual learning as major styles in comparison to science students.

Hyland (1993) examined the learning style pattern of 440 students at eight universities in Japan. The result confirmed Reid’s (1978) finding that Japanese learners appeared to have no strong learning style preference. In terms of gender, there was a greater preference for the tactile modality in women. Hyland also observed that exposure to foreign teachers influenced learning styles. For example, students who had attended classes taught by native speakers for more than two years

were significantly more kinesthetic, auditory, and group-oriented than those who had attended for less than one year. The findings also showed that seniors were significantly more kinesthetic and tactile than sophomores. The researcher concluded that because the visual modality is a negative style for many Japanese, many students are unable to take full advantage of an education system that emphasizes the importance of reading texts, composition, and written grammar exercises.

In a replication study, Stebbins (1995) compared the learning style preferences of ESL learners and native English speakers. The results lent support to the validity of Reid's (1978) main findings. For example, kinesthetic and tactile learning styles were strongly preferred by ESL students when compared to native speakers. Group learning was again chosen as the least preferred mode by most participants. Spanish speakers showed a strong preference for kinesthetic mode of learning. Arabic and Korean students also repeated their choice of multiple learning styles. And finally, Japanese students did not strongly identify any style preference.

Cheng and Banya (1998) conducted a research with 140 male freshmen in China. The participants completed seven questionnaires including the PLSPQ. On the whole, the students in the study preferred auditory, tactile, and individual learning styles. The researchers also provided further information based on the statistical analyses of the obtained data as follows:

- Students who preferred kinesthetic learning have more confidence as well as more positive attitudes and beliefs about foreign language learning than students with other perceptual learning style preferences.
- Students with the individual preference style use more language learning strategies, and they are less tolerant of ambiguity.
- Students who identify themselves as tactile learners seem to be more anxious about learning English.
- Students with an auditory preference like to make friends with and speak with foreign language speakers (in this case, English speakers). (p. 82)

Wintergerst and DeCapua (1998) explored the learning style preferences of 32 undergraduate Russian-speaking learners studying ESL in the US. The preferred major learning style was reported to be kinesthetic, followed by auditory. The researchers, then, compared responses on the PLSPQ and the data obtained from the oral interviews of a sample of the population. They concluded that the participants reflected more their personal learning style preferences than the influence of cultural traditions.

Peacock (2001b) investigated the match or otherwise between learning styles and teaching styles in an English as a foreign language (EFL) setting among 206 students and 46 teachers at a university in Hong Kong. The data were collected through the PLSPQ, interviews, and tests. Peacock slightly modified the statements on the PLSPQ to elicit the teachers' language teaching styles that was defined as "natural, habitual, and preferred way(s) of teaching new information and skills in the classroom" (p. 7).

The results uncovered that the students favored kinesthetic and auditory and disfavored individual and group learning. The teachers, on the other hand, favored kinesthetic, group, and auditory learning and disfavored tactile and individual styles. There was, therefore, a mismatch regarding group and auditory styles. Interviews revealed that about 72% of the students were discouraged by a mismatch between teaching and learning styles. About 76% said it affected their learning, often seriously. And, 81% of the teachers suggested that a mismatch between teaching and learning styles might result in learning failure, frustration, and demotivation. This latter concern was already echoed by several educators (e.g., Ehrman, 1996; Reid, 1987). Based on this finding, Peacock concluded, "A better approach is to strive for a balanced teaching style that does not excessively favor any one learning style—or rather that tries to accommodate multiple learning styles" (2001b, p. 15).

Peacock (2001b) also explored the relationship between the participants' learning style preferences and some other variables. For example, learners who preferred working in groups had significantly lower EFL proficiency, measured by a standard proficiency test. Second year students preferred kinesthetic style more significantly than their first year counterparts. And finally, with reference to discipline, humanities students had a significantly greater preference for auditory and individual styles than students majoring in science. Individual learning was a minor style preference for humanities students and a negative one for science students. In addition, group learning was chosen as a negative preference for humanities students and a minor one for science students.

Isemonger and Sheppard (2003) reported on the learning style preferences among 710 EFL students at a South Korean university with respect to a number of variables. According to the findings, a strong preference for kinesthetic learning, followed by auditory and tactile preferences, was observed. In contrast, individual learning style was strongly disfavored by the participants. Female students indicated higher learning style preferences for kinesthetic and group learning styles. Students who had studied overseas had a higher preference for the auditory mode of learning. A significant difference was also detected between first and fourth year students on the auditory scale in favor of the latter. Moreover, the analyses showed no significant differences in the students' style preferences with reference to age and major field. Similarly, no significant differences were noticed with respect to the participants' scores on a proficiency test as a predictor of English language ability.

Wintergerst, DeCapua, and Verna (2003) employed the PLSPQ to do a series of investigations among graduate ESL and EFL students. The main purpose of their study was to test the appropriateness of the items in each of the six learning style

categories. Conducting oral interviews, it was found that ESL students' answers were influenced by the "word-level linguistic cues" (p. 89) on the PLSPQ. Based on the results of factor analytic procedures, the researchers omitted seven statements on the instrument and recategorized the rest to form the LSI with three subscales: *Project Orientation*, *Group Activity Orientation*, and *Individual Activity Orientation*. Measuring the participants' learning styles with the revised questionnaire, the results revealed that the preferred learning modality for Asian ESL students and Russian ESL students was group activity orientation whereas the preferred learning style for Russian EFL students was project orientation.

Riazi and Mansoorian (2008) explored the learning style preferences among 300 Iranian EFL learners equally split between males and females. According to the results, auditory, visual, kinesthetic, and tactile learning styles were preferred as major learning styles, and group and individual learning style preferences were reported as minor. Furthermore, males preferred tactile, group, and kinesthetic learning styles significantly more than females who were less interested in these learning styles, especially group learning style.

2.3. Learning Strategies

The research into language learning strategies, which began with Rubin's (1975) seminal article, has offered invaluable insights into the nature of "an extremely powerful tool" learners employ so as to facilitate and maximize their language learning (O'Malley, Chamot, Stewner-Manzanares, Küpper, & Russo, 1985, p. 43). In addition, it became possible to help poor language learners enhance their learning through teaching strategies.

The concept of language learning strategies is associated with a lack of consensus as to what actually strategies are and how they could be best defined. The field, accordingly, abounds in “fuzzy synonyms” (Oxford & Cohen, 1992, p. 24), and since its inception, such terms as *techniques* (Stern, 1975), *tactics* (Seliger, 1984), and *learning behaviors* (Wesche, 1977) have been often used interchangeably. However, the term ‘strategy’ has been employed by many researchers “since it was used in perhaps the earliest study in this area [i.e., Rubin, 1975] and it enjoys the widest currency today” (Larsen-Freeman & Long, 1991, p. 199).

Surprisingly enough, there also exists no consensus as to what this core concept (i.e., the term ‘strategy’ itself) should properly be labeled in the context of language learning, and over the years some modifications are easily traceable: *learner strategy* (Wenden & Rubin, 1987), *learning strategy* (O’Malley & Chamot, 1990), *language learning strategy* (Oxford, 1990), *language learner strategy* (Cohen & Macaro, 2007).

2.3.1. Definition of learning strategies

The concept of learning strategies is “notoriously difficult to define” (Griffiths, 2008b, p. 83). However, since the inception of the field in the 1970s, researchers have attempted to define strategies in several ways. Rubin (1975), as the pioneer of the field, defined strategies as “the techniques or devices which a learner may use to acquire knowledge” (p. 43). This broad definition marked the beginning of strategy research. Later, Wenden described learner strategies as “language learning behavior learners actually engage in to learn and regulate the learning of a second language” (1987, p. 6).

Tarone (1981) made a distinction between *language learning strategies* and *skill learning strategies*. The former refers to the attempts made by learners to develop linguistic and sociolinguistic competence. Skill learning strategies, on the other hand, are learners' attempts to become skilled listeners, speakers, readers, and writers. To Tarone, language learning strategies are considered superior to skill learning strategies in that they are executive processes responsible for skill management and coordination. Other researches also attested the usefulness of considering strategies for developing L2 skills (Griffiths, 2004a, 2004b; Oxford, 2002; Pavičić, 2008).

Building upon Rigney's (1978) definition, O'Malley, Chamot, Stewner-Manzanares, Küpper, and Russo (1985) defined strategies as "any set of operations or steps used by a learner that will facilitate the acquisition storage, retrieval, or use of information" (p. 43). The first two researchers further made use of J. R. Anderson's (1983, 1985) theory of cognitive psychology and set their conceptualization of the term within an information processing framework in which the strategic behavior is developed and enhanced through the proceduralization of knowledge (O'Malley & Chamot, 1990). This attempt could be regarded as the first one to put the strategy concept within a framework of more or less rigorous theoretical underpinnings (see section 2.3.5).

Oxford (1990) also drew on Rigney (1978) but extended the definition to encompass "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). As it is evident, Oxford's definition enjoys comprehensiveness in comparison to the earlier ones. In other words, it is considered a landmark definition in the field as it captures some of the main features of a strategy that either were in vogue then or began to attract researchers' attention subsequently. For example,

similar to earlier definitions, Oxford's took account of strategies as being learner-initiated. The specificity of the concept of a strategy was also attested by most recent scholars (Griffiths, 2008b; Macaro, 2006) whereas some had formerly argued for a continuum of general to specific strategies (Perkins, 1985). As for the purpose of strategy deployment, Oxford's 'self-directed' function is now in researchers' focus under the term *self-regulation* (e.g., Zimmerman & Schunk, 2001). Moreover, the transferability of strategies to new contexts is being researched under the label of *strategy instruction* (see section 2.3.6). However, recent strategy experts tended to favor the term 'activities' over Oxford's 'actions' for describing strategies since the former covers both physical and mental behaviors (Griffiths, 2008b; Macaro, 2006).

With time, as the field of strategies developed, the definitions also seemed to become more fine-grained. Macaro (2001) juxtaposed some of the earlier definitions of the construct and described strategies as conscious and self-directed efforts on the part of the learners that, if systematically used, lead to learners' autonomy. Likewise, based on over thirty years of research and examining the available definitions, Griffiths (2008b) offered a very concise but rather precise definition. To her, learning strategies are "activities consciously chosen by learners for the purpose of regulating their own language learning" (p. 87). As simple as it seems, this definition touches some essential features of a strategy.

2.3.2. Features of learning strategies

Following disenchantment with offering an all-encompassing definition for strategies, several attempts were made to outline features of a strategy (Cohen, 2007; Ellis, 1994; Griffiths, 2008b; Oxford, 1990; Pavičić, 2008).

Griffiths (2004a) pointed out that due to a lack of consensus pervading in the field “whatever term may be used, and however it may be defined or classified, it is inevitably going to come into conflict with one or other of the competing terms, definitions, and classification systems” (p. 5). Therefore, a helpful way of coming to grips with strategies is to know them by their distinguishing characteristics. That is, in order to be called strategic, an activity should enjoy a number of essential features. What follows is an outline of some of these features.

➤ *Strategies are mostly employed consciously*

The general consensus of opinion among strategy experts is that a strategy should feature an element of consciousness (Bialystok, 1978; Cohen, 1998; Griffiths, 2008b; Oxford, 1990). This means that learners are fully aware of their deployment of strategies. As a result, strategies are “intentionally selected, consciously engaged in, and consciously monitored and evaluated” (Gu, 2005, p. 8). This element also marks the boundary between a ‘strategy’ and a ‘process’: If learners are no longer conscious of the behavior they are engaged in, the behavior is better called a process rather than a strategy (Cohen, 1998).

However, some researchers argued that it is more helpful to see strategies as part of a subconscious to conscious continuum (Macaro, 2006; Purpura, 1999). Likewise, Oxford and K. R. Lee (2007) acknowledged that consciousness should be part and parcel of strategy conceptualization and commented, “Consciousness is a continuum, not a mere ‘on-off’ switch” (p. 117).

➤ *Strategies are mostly specific activities*

Early strategy research focused primarily on general patterns of behavior applicable to broad contexts (Naiman, Fröhlich, Stern, & Todesco, 1978; Rubin, 1975; Stern, 1975). Rubin (1975), for example, identified behaviors as general as

having a strong drive to communicate. In contrast, recent studies have defined strategies in the context of specific tasks and skills (e.g., Oxford, Cho, Leung, & H.-J. Kim, 2004). In addition, Kaplan (1998) asserted that L2 area is generally characterized by only a few general strategies, and that it is mostly governed by domain-specific strategies. Cohen (1998), however, argued for the use of the term ‘strategy’ for both broad approaches to language learning and more specific instances. He also called for more research into the specificity or otherwise of strategies (Cohen, 2007).

➤ *Strategies are goal-directed and purposeful*

A strategic component has been included in several models of communicative competence (e.g., Bachman, 1990; Canale & Swain, 1980). It seems that the general goal of deploying strategies is directed towards developing communicative competence (Oxford, 1990). More specifically, learners employ strategies for the purpose of gaining autonomy and regulating their own learning; that is, planning, monitoring, and evaluating their own learning processes (Cotterall, 2008; Wenden, 1991).

Oxford (2001a) mentioned goal-directedness as one of the four main common features of strategies, the others being autonomy, control, and self-efficacy. Learners become autonomous by consciously controlling and monitoring their own language processes, and this, in turn, enhance their self-efficacy or their perception that they can complete a task successfully (Bandura, 1997).

➤ *Strategies are value-neutral*

Strategies are not inherently good or bad. Rather, they have the potential to be put into effective use (Cohen, 1998; Grenfell & Macaro, 2007; Hsiao & Oxford, 2002; McDonough, 1995). This feature calls into question the claims made by the earliest

strategy studies collectively known as the *Good Language Learner* (GLL) studies (Naiman et al., 1987; Rubin, 1975; Stern, 1975; see section 2.3.8). These studies were inaugurated based on the assumption that successful language learners are equipped with good strategies. The researchers, then, embarked on the task of identifying those so-called ‘good strategies’ and tried to teach them to less successful learners. While the core of the assumption is still held in the discussions on strategy instruction, the ‘good’ or ‘bad’ dichotomy is not now accepted by the majority of experts (Cohen, 1998, 2007).

➤ *Strategies contribute to language learning both directly and indirectly*

Oxford (1990) offered her taxonomy of language learning strategies under two superordinate categories: *direct* and *indirect*. The former involves direct learning and use of the subject matter. For example, the learner works directly on the material when he takes notes. Indirect strategies, on the other hand, support and manage language learning without working on the language itself. For example, in self-talk, the purpose is to lower one’s anxiety and boost self-confidence without any direct involvement in language learning.

Oxford (1990) resembled the direct strategies to the performers in a stage play and the indirect ones to the director of the same play. While the performers work with the language itself, they also work with the director who is responsible for the organization, guidance, checking, corrections, and encouragement of the performers. These two groups work hand in hand with each other and are, in effect, inseparable.

➤ *Strategies are learner-initiated*

Strategies are “*optional* [italics added] means for exploiting available information to improve competence in a second language” (Bialystok, 1978, p. 71) rather than activities imposed on learners. Put simply, learners themselves choose to employ

strategies so as to solve a particular language problem or facilitate language learning (Gu, 2005; Palmer & Goetz, 1988). Cook (1993) also argued for this point:

The concept of strategy...starts from the learner's choice. The learner is a human being with the free will to opt for one thing or the other; given that the learner is at a particular moment of time in a particular situation, what can the learner choose to do?... [There are] possibilities of choice open to the L2 learner in a dynamic situation. (p. 137)

The strategy choice on the learners' part depends mainly on three factors: (1) contextual factors including teaching and/or learning method, (2) the nature of the learning goal, and (3) individual factors including gender, age, culture, belief, motivation, and learning style (Griffiths, 2008b). This latter is an important area of strategy research, to which we turn in section 2.3.8.

➤ *Strategies are best used in clusters*

According to Garner (1988), a strategy involves “a sequence of activities rather than a single event” (p. 64). N. J. Anderson (2005) also pointed out that it is helpful to view strategy use as an orchestra. That is, effective learners opt for strategies that work well together (e.g., cognitive and metacognitive strategies) and, then, try to gauge their strategy use to the task requirements (Oxford, 2002). Strategies are flexible and could be used in various combinations and sequences. When a set of related and mutually supportive strategies always turn out to be effective for a particular task, they take the form of a *strategy chain* (Oxford, 2001a). Macaro (2006) provided an example of a strategy chain a language learner might go through when looking up a new L2 word in a bilingual dictionary in the process of writing a composition:

Here such strategies as the following may be deployed: *remember prior problems with dictionary use; predict what problems I might encounter this time; think about what part of speech I am looking for; compare all definitions given; compare collocations in L2 and L1; evaluate predictions; remember to copy word correctly; check that it makes sense in*

the sentence generated. This cluster might, in turn, be combined with another cluster of strategies...pertaining to memorizing the new word for future use. (p. 327, emphasis is original)

When such a group of activities, as a strategy cluster, are performed in a sequence again and again, they form a *strategy chunk*, thus taking less time and effort for later reference. With time and practice, the strategy chunks are performed automatically (Gu, 2005).

➤ *Strategies are best used automatically*

At the beginning stages of strategy deployment, strategies are performed within learners' conscious control. With practice and effective use of strategies, less time is needed to process the information, and, accordingly, less working memory capacity is taken up. As a consequence of this proceduralization of information, strategies are used automatically. It is worth mentioning that automaticity in strategy application does not necessarily preclude its conscious aspect. McLaughlin (1987) vividly argued for this point:

The distinction between controlled and automatic processing is not based on conscious experience. Both controlled and automatic processes can in principle be either conscious or not. Since most automatic processes occur with great speed, their constituent elements are usually, but not necessarily, hidden from conscious perception. (p. 153)

Beside the aforementioned defining features, language learning strategies have some other characteristics that are outlined as follows (Oxford, 1990):

- They expand the role of teachers, making it more varied and creative.
- They could be taught.
- They are both observable and unobservable (e.g., looking up an L2 word in a dictionary and making inferences, respectively).
- They are problem-oriented; they are used as a response to and for solving a particular language problem (e.g., learners use guessing to better understand a reading passage).
- They include several aspects of learners' involvement in language learning including cognitive, metacognitive, social, and affective.

2.3.3. *Strategy taxonomies*

Along with the myriad of definitions in the field, several classification systems for language learning strategies have been also proposed so far by different strategy experts (Bialystok, 1979; Cohen, 1998; Cohen & Weaver, 2005; Ellis, 1994; O'Malley & Chamot, 1990; Oxford, 1990; Politzer, 1983; Rubin, 1981, 1987; Stern, 1992; Wenden, 1991). Bialystok (1979), for example, classified strategies based on two aspects characterizing the occasions of language use: *purpose* (whether formal or functional) and *modality* (whether oral or written). Politzer's (1983) classification was related to the context of strategy use; that is, whether in the classroom, in individual study, or in interaction with others. Wenden (1991), on the other hand, classified strategies according to their function: *cognitive strategies* include the functions of selecting, comprehending, storing, and retrieving input while *self-management strategies* include planning, monitoring, and evaluating language learning.

More recently, Cohen and Weaver (2005) proposed a classification of strategies according to skill areas, which includes the receptive skills of *listening* and *reading* and the productive skills of *speaking* and *writing*. There are also skill-related strategies that cut across all four skill areas, such as *vocabulary learning strategies*. Learners need to learn some words just to be able to understand them when they hear them while others are needed for speaking or writing. Still other words are learned for reading (e.g., academic terms or key newspaper vocabulary). *Translation strategies* also cut across all four skills. For instance, learners may translate strategically when they listen to someone talking or listen to a TV show. In this section, three classification systems will be discussed: Rubin's (1981), O'Malley and Chamot's (1990), and Oxford's (1990).

Rubin's taxonomy

Rubin (1981), as the pioneer in the field, drew a distinction between strategies directly contributing to learning and those contributing indirectly. She listed six types of strategies used by learners that contribute directly to language learning:

Clarification/verification. This involves strategies learners employ to clarify or verify their understanding of the L2. For example, they may ask for validation that their production of words is consistent with the new language. Or, they may seek to clarify the communication rules of the specific language variety (Rubin, 1987).

Guessing/inductive inferencing. This category concerns the strategy of using previous linguistic or conceptual knowledge to derive explicit hypotheses about linguistic forms or semantic meaning. In forming hypotheses, learners define what is important in a sentence, phrase, or utterance and ignore irrelevant items. For example, learners can use what they know about the communication process to infer the meaning (e.g., the participants, the place, the topic, the register, and the like). Inferencing while reading includes keeping the meaning of the passage in mind and using it to predict meaning and guessing the meaning of unfamiliar words from remaining words in a sentence.

Deductive reasoning. This involves a problem-solving strategy in which the learner searches for and applies general rules while going about a language task. The learner might draw on prior linguistic or conceptual knowledge to generate specific hypotheses about the linguistic form or semantic meaning. This may involve such logical procedures as analogy, analysis, and synthesis. The difference between inductive and deductive reasoning is that with the former the learner looks for specific meaning or rules whereas with the latter he looks for and uses more general rules (Rubin, 1987).

Practice. Strategies in this category contribute to language learning “while focusing on *accuracy of usage*” (Rubin, 1987, p. 24, emphasis is original). Some examples are repetition, application of rules, imitation, and attention to detail.

Memorization. This refers to strategies that focus on the storage and retrieval of language. Mnemonic strategies including finding some types of association or grouping (e.g., phonetic, semantic, visual, or auditory) and keyword technique (i.e., using one item to recall a number of others) are among memorization strategies.

Monitoring. This is related to “strategies in which the learner notices errors (either linguistic or communicative), observes how a message is received and interpreted by the addressee, and then decides what to do about it” (Rubin, 1987, p. 25).

Rubin (1981) also reported on two indirect strategies:

Creating opportunities for practice. Learners use these strategies in order to create practice opportunities and increase their exposure to L2. They involve such strategies as listening to radio, watching movies, and reading in the target language.

Production tricks. Strategies in this category focus on the process of maintaining the flow of conversation by trying to get meaning across. They are deployed when the speaker confronts difficulty or misunderstanding and for avoiding communication breakdowns. Using prefabricated conversational patterns is among production tricks.

Later in 1987, Rubin’s direct strategies were subsumed under *cognitive* and *metacognitive strategies*. As for indirect strategies, creating opportunities for practice and production tricks were renamed to *social* and *communication strategies*, respectively.

O'Malley and Chamot's taxonomy

This classification is primarily based on a two-phase study (O'Malley, Chamot, Stewner-Manzanares, Küpper, & Russo, 1985; O'Malley, Chamot, Stewner-Manzanares, Russo, & Küpper, 1985) in which 70 secondary school ESL students and their 22 teachers in the US were observed and interviewed with respect to learning strategies. Based on the results, learning strategies were subdivided into three main categories: *metacognitive strategies*, *cognitive strategies*, and *socioaffective* or *social/affective strategies* (see Table 2.3 on the next pages).

Metacognitive strategies. Such strategies involve “higher order executive skills that may entail planning for, monitoring, or evaluating the success of a learning activity” (O'Malley & Chamot, 1990, p. 44). Through these strategies, learners make use of the knowledge of their own cognitive processes by thinking about the learning process as it is taking place, monitoring their production or comprehension, and evaluating learning after an activity is completed.

Cognitive strategies. They are more limited to specific learning tasks and operate directly on incoming information through a more direct manipulation of the learning material itself. This manipulation may be either mentally (e.g., making mental images) or physically (e.g., grouping items to be learned in meaningful categories).

Socioaffective strategies. According to O'Malley and Chamot (1990, p. 44), strategies in this category involve “either interaction with another person or ideational control over affect.” Employing these strategies, learners use social interaction to assist in the comprehension, learning, or retention of information. In addition, they may try to reduce their anxiety while performing a speaking activity.

Table 2.3. O'Malley & Chamot's (1990) Taxonomy of Language Learning Strategies

Category	Strategy	Definition	
Metacognitive Strategies	Advance organizers	Previewing the main ideas and concepts of the material to be learnt, often by skimming the text for the organizing principle.	
	Directed attention	Deciding in advance to attend in general to a learning task and to ignore irrelevant distracters.	
	Functional planning	Planning for and rehearsing linguistic components necessary to carry out an upcoming language task.	
	Selective attention	Deciding in advance to attend to specific aspects of input; often by scanning for key words, concepts and/or linguistic markers.	
	Self-management	Understanding the conditions that help one learn and arranging for the presence of these conditions.	
	Self-monitoring	Checking one's comprehension during listening or reading and checking the accuracy and/or appropriateness of one's oral or written production while it is taking place.	
	Self-evaluation	Checking the outcomes of one's own language learning against a standard after it has been completed.	
	Cognitive Strategies	Resourcing	Using target language reference materials such as dictionaries, encyclopedias, or textbooks.
		Repetition	Imitating a language model, including overt practice and silent rehearsal.
Grouping		Classifying words, terminology, or concepts according to their attributes or meaning.	
Deduction		Applying rules to understand or produce the second language or making up rules based on language analysis.	
Imagery		Using visual images (either mental or actual) to understand or remember new information.	

(table continues)

Table 2.3. (continued)

Category	Strategy	Definition
Cognitive Strategies	Auditory representation	Planning back in one's mind the sound of a word, phrase, or longer language sequence.
	Keyword method	Remembering a new word in the second language by: (a) identifying a familiar word in the first language that sounds like or otherwise resembles the new word and (b) generating easily recalled images of some relationship with the first language homonyms and the new word in the second language.
	Elaboration	Relating new information to prior knowledge, relating different parts of new information to each other or making meaningful personal associations with the new information.
	Transfer	Using previous linguistic knowledge or prior skills to assist comprehension or production.
	Inferencing	Using available information to guess the meaning of new items, predict outcomes, or filling missing information.
	Note taking	Writing down key words and concepts in abbreviated verbal, graphic, or numerical form while listening or reading.
	Summarizing	Making a mental, oral, or written summary of new information gained through listening or reading.
	Recombination	Constructing a meaningful sentence or larger language sequence by combining known elements in a new way.
	Translation	Using the first language as a base for understanding and/or producing second language.
	Socioaffective Strategies	Asking for clarification
Cooperation		Working together or with one or more peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance.
Self-talk		Using mental control to assure oneself that an activity will be successful or to reduce anxiety about a task.

Note. Adapted from O'Malley & Chamot (1990).

Oxford's taxonomy

Oxford (1990) classified language learning strategies into two major classes: *direct* and *indirect*. Each of these was further subdivided into three groups. Direct strategies include *memory*, *cognitive*, and *compensation strategies*. The indirect class is composed of *metacognitive*, *affective*, and *social strategies*.

Memory strategies. These are techniques learners employ to help them store the information in memory and retrieve it later. They are particularly useful in vocabulary learning. Examples of memory strategies include using imagery, semantic mapping, and keywords.

Cognitive strategies. Such strategies are described as “skills that involve manipulation and transformation of the language in some direct way, e.g., through reasoning, analysis, note taking, functional practices in naturalistic settings, formal practice with structures and sounds” (Oxford & Crookall, 1989, p. 404). They are used for structuring input and output.

Compensation strategies. They enable learners to use the new language for either comprehension or production despite deficiencies in L2 knowledge. These are intended to compensate for an inadequate repertoire of grammar and, especially, of vocabulary.

Compensation strategies are not only manipulated in the comprehension of the target language, but they are used in producing it (e.g., saying or writing expressions in the target language without complete knowledge of it). Guessing unfamiliar words while reading or listening and using a synonym or circumlocution while writing or speaking are examples of strategies in this category.

Metacognitive strategies. They are “behaviors used for centering, arranging, planning, and evaluating one's learning” (Oxford & Crookall, 1989, p. 404).

Metacognitive strategies go beyond the cognitive devices and provide a way for learners to coordinate with their own learning processes.

Affective strategies. They are “techniques like self-reinforcement and positive self-talk which help learners gain better control over their emotions, attitudes, and motivations related to the language learning” (Oxford & Crookall, 1989, p. 404). Negative feelings may hinder progress, but the control over such feelings is gained through the manipulation of affective strategies such as lowering one’s anxiety and encouraging oneself.

Social strategies. As a form of social behavior, language involves interaction among people. Social strategies such as asking for clarification, verification, or repetition and cooperating enable learners to learn with others.

On the whole, these six function-based strategy groups covered virtually every strategy cited in the literature on learning strategies to that date and were further subdivided into a total of 19 strategy sets and more subsets (see Tables 2.4 & 2.5 on the next pages).

In addition, Oxford (1990) claimed that the six categories of strategies were by no means discrete and that the strategy groups overlapped with each other to a great extent:

For instance, the metacognitive category helps students to regulate their own cognition by assessing how they are learning and by planning for future language tasks, but metacognitive self-assessment and planning often require reasoning, which is itself a cognitive strategy. (p. 16)

Table 2.4. Oxford's (1990) Classification of Direct Language Learning Strategies

Category	Strategy Set	Strategy Subset
<i>Memory Strategies</i>	Creating mental linkages	+grouping +associating/elaborating +placing new words into a context
	Applying images and sounds	+using imagery +semantic mapping +using key words +representing sounds in memory
	Reviewing well	+structured reviewing
	Employing action	+using physical response or sensation +using mechanical techniques
<i>Cognitive Strategies</i>	Practicing	+repeating +formally practicing with sounds and writing systems +recognizing and using formula and patterns +recombining +practicing naturalistically
	Receiving and sending messages	+getting the idea quickly +using resources for receiving and sending messages
	Analyzing and reasoning	+reasoning deductively +analyzing expressions +analyzing contrastively (across languages) +translating +transferring
	Creating structure for input and output	+taking notes +summarizing +highlighting
<i>Compensation Strategies</i>	Guessing intelligently	+using linguistic clues +using other clues
	Overcoming limitations in speaking and writing	+switching to the mother tongue +getting help +using mime or gesture +avoiding communication partially or totally +selecting the topic +adjusting or approximating the message +coining words +using a circumlocution or synonym

Note. Adapted from Oxford (1990).

Table 2.5. Oxford's (1990) Classification of Indirect Language Learning Strategies

Category	Strategy Set	Strategy Subset
<i>Metacognitive Strategies</i>	Centering your learning	+overviewing and linking with already known material +paying attention +delaying speech production to focus on listening
	Arranging and planning your learning	+finding out about language learning +organizing +setting goals and objectives +identifying the purpose of a language task (purposeful listening /reading/speaking/writing) +planning for a language task +seeking practice opportunities
	Evaluating your learning	+self-monitoring +self-evaluating
<i>Affective Strategies</i>	Lowering your anxiety	+using progressive relaxation, deep breathing, or meditation +using music +using laughter
	Encouraging yourself	+making positive statements +taking risks wisely +rewarding yourself
	Taking your emotional temperature	+listening to your body +using a checklist +writing a language learning diary +discussing your feelings with someone else
<i>Social Strategies</i>	Asking questions	+asking for clarification or verification +asking for correction
	Cooperating with others	+cooperating with peers +cooperating with proficient users of the new language
	Empathizing with others	+developing cultural understanding +becoming aware of others' thoughts and feelings

Note. Adapted from Oxford (1990).

2.3.4. Evaluation of strategy taxonomies

Oxford and Ehrman (1995) noted that “proliferation of strategy systems has caused problems for those researchers who believe it is important to compare results across studies” (p. 363). As it was observed, most of the attempts to classify strategies reflect more or less the same categorization. Rubin’s (1981) list of strategies tended to include “academic or study skills” (Grenfell & Macaro, 2007, p. 11) rather than what is to be now regarded as strategies. Oxford’s (1990) taxonomy overlapped with that of O’Malley and Chamot (1990) to a great extent. For instance, cognitive strategies in the latter covered both cognitive and memory strategies in Oxford’s taxonomy. Moreover, while O’Malley and Chamot put socioaffective strategies in one category, Oxford dealt with them as two separate categories and assigned a relatively greater role for the less-attended and often-ignored affective strategies, claiming that language learning is a whole person phenomenon.

However, there also exist areas of difference. Unlike the other two taxonomies, Rubin’s (1981) failed to take account of learners’ affective side at all. She also included both cognitive and metacognitive strategies in the direct class (Rubin, 1987) whereas Oxford (1990) cogently argued for the indirect contribution of metacognitive strategies to the language learning. The same holds true for Rubin’s indirect production tricks (i.e., communication strategies) as opposed to Oxford’s direct compensation strategies. Moreover, the addition of compensation strategies is also what distinguished Oxford’s system with the one proposed by O’Malley and Chamot (1990).

Nevertheless, Ellis (1994) questioned the inclusion of compensation strategies in Oxford’s (1990) taxonomy on the ground that she did not recognize the distinction between strategies directed at learning the L2 and those directed at using it. Cohen

(1998), for example, drew a distinction between *language learning strategies* and *language use strategies*. Taken together, these two sets constitute *second language learner strategies* that he defined as “the steps or actions consciously selected by learners either to improve the *learning* of a second language, the *use* of it, or both” (p. 5, emphasis is original).

To Cohen (1998), language learning strategies are employed for identifying learning materials, distinguishing them from other irrelevant materials, grouping them for easier learning, maintaining contact with them, and storing the information for later reference. Language use strategies, on the other hand, refer to those tools learners deploy while using the language in real communication. While language learning strategies have an explicit goal of helping learners improve their knowledge in the target language, language use strategies deal primarily with employing the language that learners have in their current interlanguage. They consist of four sets of strategies: *retrieval*, *rehearsal*, *cover*, and *communication*. Retrieval strategies are used to recall language material from storage (e.g. mnemonic strategies). Rehearsal strategies are used for practicing target language structures. Cover strategies are a special type of compensation strategy because they are used by learners in their attempts to create the impression that they control the material when they, in fact, do not. Finally, communication strategies include approaches to conveying informative and meaningful messages. These include intralingual strategies such as generalizing a grammar rule or meaning of a word and interlingual strategies such as topic avoidance or abandonment, message reduction, code switching, and paraphrasing.

Although the distinction between language learning and language use strategies seem tempting for theoretical purposes, it might be almost impossible to distinguish the two in practice (Ellis, 1994). Moreover, McDonough (1995) argued that such a

distinction between learning and use would imply that a learner ceases to learn when reading in the target language or speaking with a native speaker. Rather, in such situations, an attentive learner learns a lot. In other words, “Learning and use can take place simultaneously with language learning strategies and language use strategies overlapping” (Pavičić, 2008, p. 50).

Another point worth mentioning is that Oxford’s (1990) compensation strategies resemble those belonging to one type of communication strategies. As it has been stated, unlike learning strategies, communication strategies are concerned with the production of L2 output, not its acquisition and internalization (Dörnyei & Scott, 1997; Nakatani, 2006).

Besides, Oxford (1990) argued for the importance of compensation strategies by claiming that learners use such strategies to become more fluent in what they already know and, accordingly, they might gain new information about what is appropriate or permissible in the L2. To her, although such strategies might be used for language use, they assist in language learning as well. She went on to claim that the term ‘compensation strategies’ is a suitable substitute for ‘communication strategies’ in her book because:

The term *communication strategies* refers only to the speaking situation.... To avoid the false split between communication strategies and learning strategies, as well as the overly narrow (one-skilled) interpretation of communication embodied in most uses of the term *communication strategies*, this book refers instead to *compensation strategies*. (p. 243, emphasis is original)

By the same token, she drew a distinction between her compensation strategies and what is referred to as *compensatory strategies* (e.g., Ellis, 1986). She argued that her interpretation covers techniques used to make up for inadequate knowledge both

in comprehension and production whereas compensatory strategies are restricted to production-oriented activities.

All in all, as Ellis (1994) acknowledged, Oxford’s (1990) system of six basic strategy types is “perhaps the most comprehensive classification of learning strategies to date.... [Moreover,] the organization of specific strategies into a hierarchy of levels and the breadth of the taxonomy is impressive” (p. 539). Empirical data also lent support to this claim. Hsiao & Oxford (2002), for instance, conducted a comparative study of the three classification systems presented in the previous section and found that Oxford’s was superior in accounting for the variety of strategies reported by language learners.

Instead of traditional taxonomies, Macaro (2001) argued for the usefulness of a continuum for strategies (see Figure 2.1). The continuum, though seemingly simple, reveals great insights into the elements of different strategy types. In other words, the difference between strategies, as Macaro pointed out, is not of an either/or type. Rather, what matters is the extent to which the interpretation of a strategy is closer to one pole of the continuum.

Figure 2.1. Continuum of Strategies



Note. Adapted from Macaro (2001).

By *natural* and *taught* strategies, Macaro (2001) meant strategies used both for the L1 and L2 and those employed exclusively for the L2, respectively. *Primary* strategies are used in direct relationship to the learning task and in immediate response to written or spoken texts. On the other hand, *support* strategies are deployed “in preparation for or subsequent to a learning task often at some distance removed from direct input and with the learner more in control of [learning]” (p. 25). Such strategies also include some elements of evaluating the effectiveness of direct strategies being used.

Presenting such continua as Macaro’s (2001) is more applicable than a pre-set strategy taxonomy. Some strategies could not be easily incorporated into existing taxonomies, but they could be easily located somewhere on fine-tuned continua that could take account of a whole range of defining features. By the same token, Macaro argued that a continuum like this is beneficial since it can avoid the overlap between such strategies as cognitive and metacognitive to a great extent. He added:

If we adopt the approach of only referring to them [i.e., strategies] as cognitive, metacognitive, social, and affective, though this would be more anchored in a recognizable theory of cognitive learning, the approach deprives the reader of alternatively ways of representing these strategies. (p. 24)

2.3.5. Theoretical framework

In the mid 1960s, there was a shift of paradigm in educational psychology away from the behaviorist stimulus-response approach to a cognitive approach with an emphasis on the individual learners. This shift was not without its reverberations for learning in general and second or foreign language learning in particular. Cognitive theory, which is based on the information processing model of human learning, deals with mental processes involved in learning; that is, the way the brain perceives, processes, stores, and retrieves the information. In this theory, three fundamental

cognitive aspects of language learning are of particular concern: (1) how knowledge is developed, (2) how the knowledge becomes automatic, and (3) how the newly acquired knowledge is integrated into the learner's existing cognitive system (O'Malley & Chamot, 1990).

Language learning strategy research has been theoretically placed within the framework of the cognitive approach to language acquisition. Such an approach recognizes strategies as one of the most significant cognitive aspects in L2 acquisition. Strategies involve special ways of processing the information to enhance comprehension, storage, learning, retention, and retrieval of the relevant information.

Drawing on J. R. Anderson's (1983, 1985) *Adaptive Control of Thought model*, O'Malley and Chamot (1990) proposed one of the first theoretical frameworks for learning strategies research. In this psychological model, second language acquisition is best viewed as a complex cognitive skill. The core of the framework concerns a distinction between two representations of information in memory: *declarative* and *procedural* (Færch & Kasper, 1983; McLaughlin, 1987). The former refers to what we know about; the static information in memory. Definition of words, facts, and rules are among pieces of declarative knowledge. Procedural knowledge, on the other hand, relates to what we know how to do; the dynamic information in memory.

Ellis (1994) saw the distinction between these two types of knowledge on three grounds. First, whereas declarative knowledge is characterized by 'all or nothing,' procedural knowledge can be partial. Second, declarative knowledge is acquired suddenly by receiving a message while procedural knowledge is acquired gradually by performing the skill. And finally, declarative knowledge, unlike procedural, can be communicated verbally.

This proceduralization or skill acquisition process involves three stages: *cognitive*, *associative*, and *autonomous*. Through these stages, control over acquired knowledge is developed (J. R. Anderson, 1983, 1985). During the cognitive stage, the learner is instructed how to do a particular task, observes how the task is performed, and/or studies it himself. This requires the learner's conscious activity and the acquired knowledge is in declarative form. This knowledge is, however, inadequate by itself, and the learner's performance is full of errors since many errors in language production could be attributed to the lack of procedural rather than declarative knowledge. An example of performing in this stage is trying to memorize and use vocabulary or the rules of grammar when learning to speak the target language (O'Malley & Chamot, 1990).

The associative stage involves two major changes in the development of proficiency in a particular skill. Firstly, with practice and several trials, errors in the declarative representation of the stored information are gradually detected and reduced. The performance is, nevertheless, slow and errors may still be evident. Secondly, connections among different components of the given skill are strengthened. In this stage, declarative form is beginning to turn gradually into procedural. Nevertheless, the former is not entirely lost as fluent speakers, for example, could remember the rules of grammar. In the final stage of skill acquisition, the autonomous stage, the skill performance becomes automatic, and errors disappear. Moreover, functioning in this stage requires much less demand on working memory.

The three-stage model of skill acquisition assumes that "individuals will learn the rules underlying performance of a complex skill as a precursor to competent and automatic skill execution" (O'Malley & Chamot, 1990, p. 26). This process of skill acquisition is called *knowledge compilation* and may involve two components. In the

first, learners create a propositional representation of a sequence of actions in the form of a *production system*. In other words, cognitive skills including learning strategies could be represented as production systems. Basically, a production system takes the form of an IF-THEN statement of an action preceded by a condition or goal (O'Malley & Chamot, 1990). Two examples of production systems as related to learning strategies are as follows (p. 52):

IF the goal is to comprehend an oral or written text,
and I am unable to identify a word's meaning,
THEN I will try to infer the meaning from context.

IF I have heard a complete oral passage expressed,
and I am unable to summarize the passage,
THEN I will ask the speaker to repeat the passage.

The second component of knowledge compilation involves combining several production systems that have already become automatic into a single *production set* that takes the form of a strategic plan. This plan is worked out in response to a particular language learning problem by applying certain strategies in order to resolve the problem and facilitate learning. However, if the learner does not know enough about appropriate strategy application, he might either not perform the strategy or use a more familiar one but less efficiently. For instance, he might guess the meaning without making use of the available contextual clues.

The theoretical framework that was presented views the role of language learning strategies as making explicit what otherwise may occur without learners' awareness or may occur inefficiently, resulting in incomplete storage of information into the long-term memory. Through employing strategies, learners select, acquire, organize, and integrate the new knowledge (Weinstein & Mayer, 1986).

This psychological perspective on language learning strategies involves the individual learner and what occurs in his mind. Recently, researchers' attention has been directed towards a sociocultural view on learning strategies that covers the broader context of society as the focus of inquiry. Primarily based on the work done by the Russian theorist Lev Semeonovich Vygotsky, learning strategies in such a perspective are defined as "a learner's socially mediated plan or action to meet a goal, which is related directly or indirectly to L2 learning" (Oxford & Schramm, 2007, p. 48).

According to Vygotsky's (1978) *dialogic model*, strategies are regarded as higher order mental functions (e.g., analysis, evaluation, and synthesis) that are developed in a sociocultural context through social interactions in the form of dialogs with the help and support of a more capable and knowledgeable one (e.g., teacher, parents, or a more advanced peer). The problem-solving processes mediated in the dialogs become part of the learner's thinking as he actively 'appropriates' (i.e., internalizes or transforms) the essential features of the dialogs. Put another way:

Learning starts out as 'other-regulation' (regulation by another person) but, through a series of dialogs with more capable people, becomes self-regulation.... The more knowledgeable person helps the learner traverse the 'zone of practical development,' the area of potentiality made possible through help (or scaffolding), and removes the help or scaffolding when it is no longer needed. (Oxford & Schramm, 2007, p. 53)

Vygotsky's model could be viewed as covering four strategy sets. First, there are *task-involved strategies* that include a range of both cognitive and metacognitive strategies. Second, *self-involved strategies* include those for controlling emotion and coping with motivation (e.g., affective strategies plus some metacognitive strategies for refining goals). The third category includes social strategies and is referred to as *other-involved strategies*. And finally, *setting-involved* or *environment-organizing*

strategies deal with a subset of metacognitive strategies for regulating learning (McCaslin & Hickey, 2001).

While the psychological perspective involves a search for certainty through precise and objective observation of data and is associated with quantitative research, the sociocultural view focuses on thick description based on detailed information collected by participant observers in specific settings and is often linked with qualitative research. In order to bridge the gap between these two seemingly incompatible perspectives, Oxford and Schramm (2007, p. 49) argued for a synergic relationship between the two since this “might lead to a more powerful and useful theory and research on learner strategies...[in which] they can enrich and be enriched by the other.”

2.3.6. Strategy instruction

Failure in language learning could be, in part, attributed to the learners' lack of awareness of the cognitive tools and strategies at their disposal (Dansereau, 1978). The initial impetus behind the strategy research in the mid 1970s was to identify and teach strategies employed by successful language learners to less successful ones, hence improving the latter's language learning. While the body of research was primarily focused on the identification, description, and classification of strategies, the field has recently witnessed more and more research efforts going into what is referred to as strategy instruction or *strategy-based instruction* (Rubin, Chamot, Harris, & N. J. Anderson, 2007). This interest was also due to the great potential of strategies for being learned through the help and support of the teacher as a more capable one.

Strategy instruction has been simply defined as “the explicit teaching of how, when, and why students should employ foreign language learning strategies to enhance their efforts at reaching language program goals” (Y. Chen, 2007, p. 20). In recent years, strategy instruction has grown in importance since it (1) develops learners’ own personalized strategy systems, (2) promotes learner autonomy, self-direction, and self-evaluation, and (3) encourages learners to take more responsibility of their own language learning (Cohen, 1998; Rubin et al., 2007). It is also in line with Nunan’s (1996) recommendation that “language classrooms should have a dual focus, not only teaching language content but also on developing learning processes as well” (p. 41).

Besides, empirical findings indicated that strategy instruction could result in improved proficiency or achievement overall (Chamot & Küpper, 1989) or in specific language areas including listening (Carrier, 2003), speaking (Dadour & Robbins, 1996), reading (Ikeda & Takeuchi, 2003), writing (Macaro, 2001), and vocabulary learning (Cohen & Apehek, 1980). Accordingly, the number of publications specifically designed to teach learning strategies is increasing (H. D. Brown, 2002; Hewitt, 2008; Oxford, 1990; Rubin & Thompson, 1994; Scarcella & Oxford, 1992; Silver, Strong, & Perini, 2007).

Several models of strategy instruction have been proposed (Chamot, 2005a; Chamot, Barnhardt, El-Dinary, & Robbins, 1999; Cohen, 1998; Grenfell & Harris, 1999; Macaro, 2001; O’Malley & Chamot, 1990; Oxford, 1990). Among these models, the *Cognitive Academic Language Learning Approach* (CALLA) offered by O’Malley & Chamot (1990) has gained wider currency. Chamot (2005a) and Chamot et al. (1999) also provided an update to the CALLA model. Table 2.6 (on the next page) shows the steps involved in three recent models.

Table 2.6. Models for Language Learning Strategy Instruction

CALLA (Chamot, 2005a)	Grenfell & Harris (1999)	Macaro (2001)
<p>Preparation: Teacher identifies students' current learning strategies for familiar tasks.</p>	<p>Awareness raising: Students complete a task, and then identify the strategies they used.</p>	<p>Awareness raising & strategy exploration: Teacher asks students to talk about the strategies they employ for a particular task; Students fill in a strategy questionnaire.</p>
<p>Presentation: Teacher models, names, and explains the new strategy and asks students if and how they have used it.</p>	<p>Modeling: Teacher models, discusses value of new strategy, makes checklist of strategies for later use.</p>	<p>Modeling: Teacher names and demonstrates helpful strategies, stressing the potential benefits and their possible links.</p>
<p>Practice: Students practice new strategy; in subsequent strategy practice, teacher fades reminders to encourage independent strategy use.</p>	<p>General practice: Students practice new strategies with different tasks.</p>	<p>Strategy combining & application: Students combine and deploy related strategies appropriate for the given task.</p>
<p>Self-evaluation: Students evaluate their own strategy use immediately after practice.</p>	<p>Action planning: Students set goals and choose strategies to attain those goals.</p>	<p>Initial evaluation: Students engage in a teacher-led discussion on how they went about the task and how successfully the strategies worked for them.</p>
<p>Expansion: Students transfer strategies to new tasks, combine strategies into clusters, develop repertoire of preferred strategies.</p>	<p>Focused practice: Students carry out action plan using selected strategies; teacher fades prompts so that students use strategies automatically.</p>	<p>Scaffolding removal: Periodically, before doing an activity, students are asked to list the strategies they want to use.</p>
<p>Assessment: Teacher assesses students' use of strategies and impact on performance.</p>	<p>Evaluation: Teacher and students evaluate success of action plan; set new goals; cycle begins again.</p>	<p>Overview evaluation: Both teacher & students assess the effectiveness of students' strategy application through, for example, a discussion with feedback.</p> <p>Monitoring strategy use: Teacher monitors students' strategy use over the longer term.</p>

Note. Adapted from Chamot (2008).

As it is evident in the table, despite different labels for the steps, the models have a number of features in common. They all involve the exploration of learners' current strategy repertoire, the teacher's modeling of certain strategies while stressing their value and purpose, learners' practicing of the strategies, and the evaluation of strategy application. However, as Chamot (2008) noted, the CALLA model is recursive rather than linear; that is, if necessary, the teacher and learners could go back to the previous phases. The model provided by Grenfell and Harris (1999) is cyclical in that learners work through a cycle of six steps and then begin a new cycle. Learners also make personal action plans by choosing strategies that work better for them and assess the efficiency of their plans. Macaro's (2001) model is also cyclical. In this model, the scaffolding is gradually removed only after the teacher ensures that learners are able to transfer and apply strategies to similar tasks. In addition, the extra final step (i.e., monitoring strategy use) could be regarded as part of the teacher's continued evaluation of learners' strategy use after a longer span of time.

In implementing any model of strategy instruction, a number of choices have to be faced with. The first choice is whether to integrate instruction into the regular language curriculum or to teach strategies independent of the language course. Those favoring integrated instruction argued that learning in context provides learners with ample opportunities for practicing strategies with authentic learning tasks (e.g., Chamot, 2004, 2005b; Cohen, 1998; Grenfell & Harris, 1999; Harris, 2003; Macaro, 2001; Nunan, 1997; Oxford, 1990). There are, however, a smaller number of educators arguing that strategies are generalizable to a variety of contexts (e.g., Gu, 1996; Weinstein & Mayer, 1986). In other words, they noted that it is easier to plan a separate strategy course in which learners' attention is focused only on developing strategic behavior rather than trying to teach them content at the same time.

The next choice relates to whether the actual strategy instruction should be *direct* or *embedded*. Direct or explicit instruction involves raising learners' awareness of their current strategies, the teacher's explaining the strategies, learners' practicing of new strategies, and evaluating learners' performance (i.e., the very steps involved in the models in Table 2.6). In contrast, embedded or uninformed strategy instruction provides learners with materials and activities designed to elicit the use of the strategies in focus. The learners are not informed of the reasons behind adopting such an approach or the name and value of specific strategies (O'Malley & Chamot, 1990). Many strategy experts asserted the importance of explicitness of strategy instruction for it raises learners' metacognitive awareness and informs them of the purpose and value of their strategy application (e.g., Chamot, 2008; Cohen, 1998; Graham & Harris, 2000; Harris, 2003; Nunan, 1997; Oxford, 1990). Since embedded instruction does not promote this metacognitive component, strategy use is not maintained over time, and less strategy transfer takes place compared to the direct instruction (O'Malley & Chamot, 1990).

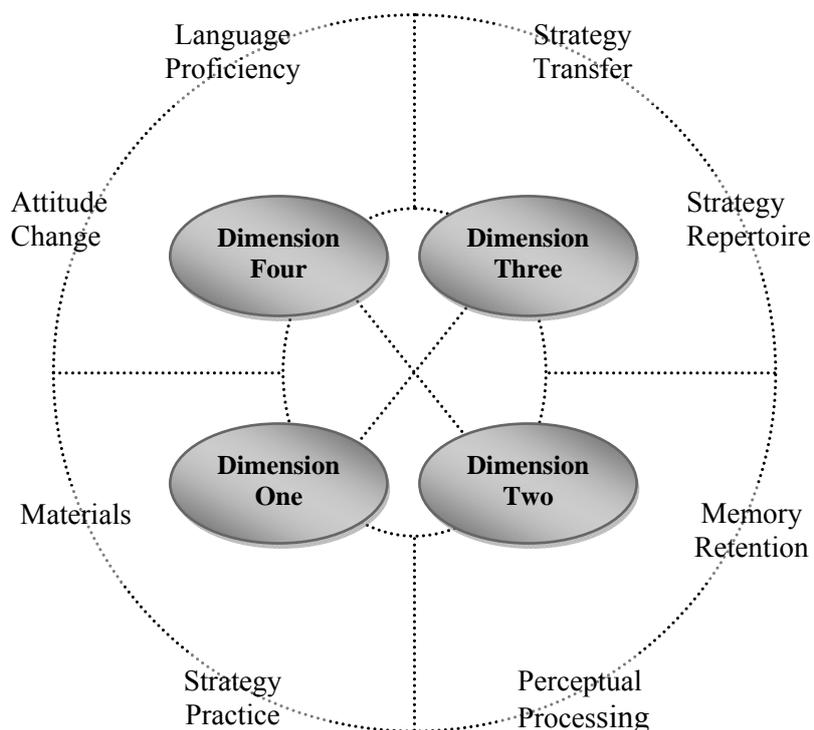
Another choice in carrying out strategy instruction concerns the language of instruction; that is, whether to teach strategies in learners' first language or in the target language. Despite the first two choices, the issue of language is far from resolved. The beginning level learners, for example, do not have L2 proficiency required for understanding the teacher's explanations in the target language as to why and how to use strategies. On the other hand, postponing strategy instruction in the L2 until upper levels might deprive them of this "extremely powerful learning tool" (O'Malley, Chamot, Stewner-Manzanares, Küpper, & Russo, 1985, p. 43). This could lead to a lack of motivation for pursuing their study. There are, however, some suggestions on the initial teaching of strategies in learners' native language but giving

them a target language name and also explaining them in simple L2 (Chamot et al., 1999). This is, of course, applicable to classes in which learners speak the same language and the teacher knows that language. Alternatively, some researchers have made use of a combination of both first and second languages in strategy instruction (e.g., Grenfell & Harris, 1999; Ozeki, 2000). For instance, Ozeki (2000) conducted strategy instruction for Japanese learners in English. The questionnaires, journal prompts, and checklists were in simple English, but the learners were also offered the option of responding in Japanese.

On the whole, it seems that the explicit teaching of strategies in an integrated fashion could facilitate the transfer of strategies to new tasks and situations. Y. Chen (2007) reported on a research into the impact of strategy instruction. Sixty four junior learners at a university in Taiwan participated in a program of explicit and integrated teaching of listening strategies such as grasping the main idea, selective attention, and using contextual clues. The instruction lasted for eight weeks, with a two-hour session each week. The sources of data included weekly working journals kept by learners during the instruction (they were free to write in English or Chinese, their native language) and unstructured interviews conducted with each learner at the end of the instruction.

Following a qualitative method of data analysis, a model of the impact of strategy instruction was proposed (see Figure 2.2 on the next page). The model consisted of four interrelated dimensions, each of which was in turn subdivided into two areas, hence producing eight categories of change in learners' learning processes.

Figure 2.2. A Model of Strategy Instruction Impact



Note. Adapted from Y. Chen (2007).

The first dimension relates to the exposure to the target language and involves externally observable changes in the learners' behavior. The instruction increased some learners' motivation to listen to authentic materials and to choose materials of greater complexity. In addition, strategy practice expanded the opportunities for employing listening strategies on the learners' part. Dimension Two, which concerns changes in the learners' internal learning processes, includes more organization, better concentration, and a clear direction. That is, learners in the study reported that practicing listening strategies was helpful in making them more purposeful and proactive. Moreover, they associated the use of comprehension strategies with longer retention of the auditory input in memory and a deeper involvement with the input.

Dimension Three covers strategy-specific changes in the learners' approach to language learning. The instruction motivated learners to develop their own preferences in choosing listening strategies and prioritizing them to fit their particular ways of language input processing and their individual learning styles. Furthermore, learners were reported to transfer listening strategies to reading or speaking tasks. As for the fourth dimension, the learners reported improvements in their English listening comprehension skills. They also developed a liking for learning the target language due to their satisfying experience in the program. Based on these four dimensions of change, Y. Chen (2007, p. 26) concluded, "The impact of strategy training on the learner not only leads to the improvement of language proficiency, but, more importantly, engages with the dynamic internal changes in the learning processes."

2.3.7. Criticisms against learning strategies

Since the inception of the strategy field, so many criticisms have been leveled at the entire body of research in a way that, as Griffiths (2008b) observed, many educational psychologists have even come to abandon the term 'strategy' in favor of the term 'self-regulation' (Dörnyei & Skehan, 2003). Moreover, some researchers (e.g., Dörnyei, 2005) have cast doubt on the validity of the research results in the field and suggested to dismiss the whole line of research due to a lack of consensus as to how strategies should be described and classified. However, we could not simply set aside the entire research efforts because the central concept in the field is still fuzzy. As Gu (2007) colorfully put it, "While Pluto was recently removed from the list of planets because astronomers voted for a new definition of 'planet,' no one is dismissing astronomy because astronomers can't agree on what a planet is" (p. vii).

The main criticism concerns the confusion over the term ‘strategy’ as the unit of analysis and the way it should be defined and categorized. Ellis (1986) linked this problem to the researchers’ inability to explore the learners’ mind that is like “stumbling blindfold around a room to find a hidden object” (p. 188). Stevick (1990, p. 144) referred to a similar issue as “Outside-Inside Problem.” He argued that the distinction between a strategy as a mental construct and its external representation (i.e., a physical activity) is not clear-cut. Another concern voiced by Stevick, phrased as “Size-Abstractness Dilemma,” assumed that some strategies are larger and more global than others and that some are perceived to be more abstract than other strategies. This dilemma, Stevick stated, would make any attempt to clearly define and classify strategies fruitless.

Kellerman (1991) pointed to the confusing overlaps in strategy taxonomies. Planning, for instance, as a metacognitive strategy could be also considered cognitive since it requires reasoning. Furthermore, Rees-Miller (1993) questioned strategy instruction and warned that devoting a considerable amount of precious classroom time to teaching strategies might not prove successful due to the difficulty of transferring strategies to new situations.

Several attempts were also made in response to the criticisms (e.g., Chamot & Rubin, 1994; Grenfell & Macaro, 2007; Oxford & Cohen, 1992; Macaro, 2006). However, the battle over definition has not been resolved yet. This seems quite natural as “disagreement in academia is perhaps more of an indication of vitality than is seemingly uniform conformity” (Cohen, 2007, p. 43).

Skehan (1989) considered the learning strategy field “a clear example of a research-then-theory perspective” (p. 98). O’Malley and Chamot (1990) provided a more or less rigorous theoretical framework for strategy research based on J. R.

Anderson's (1983, 1985) cognitive psychology (see section 2.3.5). Strategies could encompass more than mental operations (Oxford & Cohen, 1992). Accordingly, some strategies are observable (e.g., looking up an L1 word in a dictionary), others are not (e.g., inferencing). However, even observable strategies have some mental components (Macaro, 2006). The general consensus is that most strategies are specific (Griffiths, 2008b). Some educators also suggested using a classification system to cover both general and specific strategies in a hierarchical fashion (Cohen, 1998).

As for strategy instruction, even Dörnyei (2005), a harsh critic of the field, surprisingly supported the issue of teaching strategies to learners as a useful classroom practice. It has been also stated that strategy transfer is practically facilitated when the teacher adopts an explicit and integrated approach to strategy instruction. This helps learners understand their own language learning processes and raises their awareness of the value and purpose of strategy application (Chamot, 2004; Chamot & Rubin, 1994; Y. Chen, 2007).

In recent years, as the fruitfulness of research into learning strategies is increasingly winning wider acceptance, the critics have dramatically decreased in number. Particularly, as mentioned earlier, the sharpest criticism comes from Dörnyei (2005) who even questioned whether the notion of learning strategies exists as a psychological construct. Over thirty years of research and practice in the field have, however, rendered such a claim unsubstantiated so much so that it seems that Dörnyei is treating the field as if he were "setting up a straw man in order to knock him down" (Grenfell & Macaro, 2007, p. 26).

2.3.8. Studies pertaining to language learning strategies

In this section, first, an overview of the GLL studies will be presented. Next, the research on learners' use of function-based strategies along with the factors influential in the choice of strategies will be described. Finally, skill-based strategies will be explored.

the good language learner studies

While Rubin's (1975) report of four-year research efforts is regarded as the first study in the field of language learning strategies, others also contributed to the field at the same time (e.g., Naiman et al., 1978; Stern, 1975). The related papers published during the second half of the 1970s are collectively referred to as the GLL studies. The assumption underlying this surge of research was straightforward. Put simply, language learners showed differential success when going about the task of language learning. This could be, in part, attributed to tools they utilize; that is, the range and type of strategies. The strategies employed by successful language learners could be identified and taught to less successful learners, hence helping improve the latter's language learning. This assumption, as simple as it seems, paved the way for much of the later studies and also set the scene for strategy instruction as one of the main aims of research in the field.

Based on the data collected using different methods including the analysis of daily journal entries, classroom observations, and interviews in a variety of settings, Rubin (1975) attributed successful language learners' success to three variables: aptitude, motivation, and opportunity. To her, the interaction of these variables dictated the strategies that successful language learners deploy. Such strategies include guessing willingly and accurately, having a strong desire to communicate or learn from

communication, practicing a lot, attending to meaning, and monitoring one's own and others' speech.

Almost at the same time, Stern (1975, p. 31) mainly drew on his own experience as a teacher and listed a number of strategies used by successful language learners. He identified ten strategies:

1. A personal learning style or positive learning strategies
2. An active approach to the task
3. A tolerant and outgoing approach to the target language and empathy its speakers
4. Technical know-how about how to tackle a language
5. Strategies of experimentation and planning with the object of developing the new language into an ordered system and/or revising this system progressively
6. Constantly searching for meaning
7. Willingness to practice
8. Willingness to use language in real communication
9. Self-monitoring and critical sensitivity to language use
10. Developing the target language more and more as a separate reference system and learning to think in it

Stern described this list as speculative and in need of confirmation and modification. An interesting point in Stern's list is his inclusion of learning style as a learning strategy, adding to the confusion as to what actually constitutes a strategy.

Naiman et al. (1978, also 1996) based their work on the result of the interviews with 34 successful language learners and also Stern's (1975) list of strategies. They offered strategies in five major categories. To them, successful language learners (1) are actively involved in the language learning process, (2) develop an awareness of language as a system, (3) develop an awareness of language as a means of communication, (4) deal with the affective demands of the new language, and (5) review, revise, and extend the new language system through inferencing and monitoring.

In addition to this set of general strategies, the researchers provided a complementary list of techniques for specific aspects of language learning including language learning skills. Some of these techniques, which are now referred to as *skill-based strategies*, are as follows:

- *Listening* (e.g., listening to the radio, TV, and movies and exposing oneself to different accents and registers)
- *Speaking* (e.g., making contact with native speakers, asking for corrections, memorizing dialogs, and not being afraid of making mistakes)
- *Reading* (e.g., reading something everyday, reading text at the beginner's level, reading things that are familiar, and looking for meaning from context without consulting a dictionary)
- *Writing* (e.g., having pen pals, writing frequently, and frequent reading of what you expect to write)
- *Grammar* (e.g., following rules given in texts, inferring grammar rules from texts, comparing the L1 and L2, and memorizing structures)
- *Vocabulary* (learning words in context, learning words that are associated, using new words in phrases, and using a dictionary when necessary)

Later empirical research revealed that even unsuccessful language learners are mentally active when facing a language task and do have a repertoire of strategies but could not deploy them as effectively as their successful counterparts do (e.g., Porte, 1988; Vann & Abraham, 1990). Furthermore, it was found out that, with a few exceptions, strategies are value-neutral (see section 2.3.2), and the way of strategy application determines their effectiveness (Hsiao & Oxford, 2002). These findings ran counter to the main assumption underlying the GLL studies that only successful language learners used strategies and that theirs were the most useful ones and should be taught to less successful learners. Nevertheless, the GLL studies offered invaluable insights into the way learners make use of learning strategies to facilitate and gain control over their own language learning processes.

function-based strategies

A great number of investigations exploring learners' strategy use have based their studies on the function of strategies as reflected in Oxford's (1990) classification system of six strategy categories (viz., memory, cognitive, compensation, metacognitive, affective, and social). Quantitatively, the strategy use in such studies was mainly measured by the SILL. Most of these studies showed that learners were medium strategy users overall. What follows is a review of some of these studies with a major focus on the type and range of the strategy use as reported by the participants.

Mullins (1992) reported on a study of the strategy use of 110 Thai university EFL students. She found that the participants favored compensation, cognitive, and metacognitive strategies highly. This was followed by the medium use of social, memory, and affective strategies. In the same year, Oh (1992) found the highest use of metacognitive strategies among 59 EFL students at a Korean university. The participants also preferred compensation, affective, social, and cognitive strategies at a medium level. In addition, they favored memory strategies at a low level.

Klassen (1994) found the highest use of compensation strategies among 228 freshman English language learners at a Taiwanese university. In order, metacognitive, social, affective, cognitive, and memory strategy categories followed. The highest use of compensation strategies was also reported in another study including a sample of Taiwanese university students (N.-D. Yang, 1994).

In a research into the relationship between the frequency of strategy use and several other variables among 262 English government employees studying different foreign languages in the US, Ehrman and Oxford (1995) found that compensation strategies were used most frequently, followed by social, cognitive, metacognitive strategies, respectively. Memory and affective strategies were preferred the least.

In another study, Green and Oxford (1995) explored the frequency of strategy use among 374 tertiary-level English learners at the University of Puerto Rico. The results of this study were not dissimilar to those observed by Ehrman and Oxford (1995) in that the participants reported high use of cognitive, compensation metacognitive, and social strategies with the lowest preference for memory and affective strategy categories.

Bedell and Oxford (1996) reported on the strategy use of 353 learners studying English in China. The participants preferred compensation strategies the most. Memory strategies were the least favored category. Ku (1997) studied the frequency of strategy use among 335 college students in Taiwan. Compensation strategy category ranked the first, followed by cognitive, metacognitive, memory, social, and affective strategy categories, respectively.

Bremner (1999) carried out a research into the strategy use of 149 primary education students at a university in Hong Kong. Based on the results, compensation and metacognitive strategies were reported to be the most frequently used strategies. Moreover, the participants preferred affective and memory strategies the least. Purdie and Oliver (1999) also conducted a study into the strategy use of 58 language learners from different cultural backgrounds. The participants were perceived as successful by their teachers. The researchers constructed a 38-item questionnaire based on Oxford's (1990) and O'Malley and Chamot's (1990) classification systems of learning strategies but did not include any affective strategy category. The findings indicated that, in order, compensation, cognitive, memory, social, and metacognitive strategies were favored by the participants in the study.

Likewise, Sheorey (1999) developed a 35-item questionnaire to measure the strategy use of 1,261 first year undergraduate Indian students. The questionnaire

consisted of four strategy categories: *metacognitive*, *cognitive-memory*, *social*, and *functional practice* (i.e., strategies for looking for opportunities to practice English outside the class). According to the results, metacognitive strategies were preferred most often, followed by cognitive-memory, social, and functional practice strategies, respectively. In another study, Wharton (2000) surveyed 678 undergraduate bilingual students learning Japanese or French at a university in Singapore. Based on the 80-item SILL, the results indicated that the participants used social strategies most often and affective strategies least often.

Tajeddin (2001) used a modified and translated version of the 80-item SILL to measure the strategy use among 764 Iranian learners of English language. The results revealed that the participants favored metacognitive, cognitive, social, and compensation strategies, respectively. Memory and affective strategies were used least often. In the same context, Akbari and Talebinezhad (2003) surveyed 128 Iranian English major university students. Responding to a Persian version of the SILL, the participants reported the highest use of metacognitive strategies. Social, compensation, memory, cognitive, and affective strategy categories followed, respectively.

Peacock and Ho (2003) explored the strategy use of 1,006 Hong Kong university learners from diverse disciplines in EAP classes. Among the six strategy categories on the SILL, the participants used compensation strategies most often. In order of learners' preference, cognitive, metacognitive, social, memory, and affective strategy categories followed. Shmais (2003) also reported on the strategy use of 99 Arabic-speaking EFL learners in Palestine. She observed that metacognitive strategies were used most often and compensation strategies least often by the participants in the study.

In a study of the strategy use of 220 Iranian English major university students, Riazi and Rahimi (2005) observed that the participants reported metacognitive strategies as the most frequently used category followed by affective, compensation, and cognitive strategy categories. Social and memory strategies were preferred at the lowest frequency.

More recently, Hong-Nam and Leavell (2006) reported on a study into the strategy use of 55 ESL learners in an intensive English program at a university in the US. The results indicated that the participants preferred to use metacognitive strategies most frequently, followed by social, compensation, and cognitive strategies, respectively. Memory and affective strategies were used least often. In a research into the relationship between strategy use and a number of variables (Magogwe & Oliver, 2007), 480 students at different levels of schooling in Botswana filled in a modified version of the SILL. The sample reported using metacognitive strategies the most. Among the other strategy categories, compensation category ranked the lowest.

In sum, in most surveys based on the function of strategies, the most frequently used strategy categories were reported to be compensation, metacognitive, and cognitive while the least used were social, memory, and affective irrespective of any other learner characteristics including factors influencing strategy use. This indicates most learners' natural reliance on the use of strategies for making up for deficiencies in their L2 knowledge and also strategies for regulating their own learning and giving it some organization. Sadly, it also shows their lack of awareness of the great impact of strategies for controlling emotional responses to language learning, cooperating with others, and storing and retrieving the material effectively.

factors affecting strategy use

There are a number of independent variables that affect the choice of language learning strategies including motivation, language proficiency level, learning style, personality type, age, gender, cultural background, and beliefs about language learning (Ehrman & Oxford, 1995; Macaro, 2001; Oxford, 1990; Pavičić, 2008; Takeuchi, Griffiths, & Coyle, 2007). The research into the influence of such factors on strategy use is important in that strategy instruction should be specifically tailored in such a way to take account of language learners' individual and situational differences (Takeuchi et al., 2007). What follows is an account of some of these factors. The influence of learning styles on learning strategies will be discussed in section 2.4.2.

Motivation

Motivation has been found to be the most influential and powerful factor influencing learners' choice of strategies. Most studies have reported a significant positive relationship between learners' level of motivation and their reported frequency of strategy use. Accordingly, educators have identified a set of strategies with motivational load that learners employ to get their motivation online and to help keep themselves on track. These come under different labels: *self-motivating strategies* (Dörnyei, 2001), *anxiety management* (Horwitz, 2001), *affective learning strategies* (Oxford, 1990), *motivational self-regulation* (Ushioda, 2003), and *efficacy management* (Wolters, 2003). Such strategies include setting concrete short-term targets, engaging in positive short-talk, and motivating oneself with incentives and self-rewards (Ushioda, 2008).

Oxford and Nyikos (1989) studied the strategy use of 1,200 college students in the US. They deployed a 121-item version of the SILL as the instrument. As well as

affective, memory, and social strategies, this version of the SILL included some strategy categories as follows:

- *general study* (e.g., strategies for reading and study including previewing lessons and scanning the reading passage)
- *authentic language use* or *functional practice* (e.g., seeking native speakers for conversation and reading authentic, natural texts)
- *searching for and communicating meaning* (e.g., guessing when complete information is not available and finding alternative ways to express meaning)
- *resourceful, independent* (e.g., strategies that can be used without involving anyone else including reading aloud and listing related words)
- *self-management* (e.g., metacognitive strategies such as correcting own written errors and planning for future language tasks)
- *visualization* (e.g., using mental images, linking sounds with visual images, and visualizing spelling)
- *formal model-building* or *formal rule-related practice* (e.g., finding similarities between languages, applying and revising grammar rules, and analyzing words into component parts)
- *conversational input elicitation* (e.g., requesting slower speech, and asking for pronunciation correction)

The results revealed that highly motivated learners employed four strategy categories more often than their less motivated counterparts (viz., formal-rule related practice, functional practice, general study, and conversational input elicitation strategies). The researchers concluded that motivation, among other variables in the study, was the most significant predictor of learners' learning strategy choice.

Oxford and Ehrman (1995) examined the relationship between strategy use and a number of variables including motivation, measured by the *Affective Survey* (AS, Ehrman & Oxford, 1991). It was found that overall strategy use was strongly associated with motivation. Moreover, most of strategy categories on the SILL in general and cognitive strategies in particular were reported to be significantly and positively correlated with the motivational subscales on the AS.

Wharton (2000) studied the strategy use of 678 bilingual university students in Singapore with reference to a number of variables including motivation. Motivation was measured as to how important it was for the participants to become proficient in the target language. The findings revealed that the students who reported that it was *very important* or *important* to become proficient in the target language had a significantly higher overall use of strategies compared to those for whom becoming proficient was *not so important*. However, no significant difference was found in the use of six strategy categories with respect to motivation.

In sum, motivation might be regarded as one of the strongest correlate of almost all aspects of learning including the use of language learning strategies. However, the crucial question remains as to whether high motivation leads to high strategy use on the learners' part or the other way round (Okada, Oxford, & Abo, 1996). This concern calls for longitudinal studies into the link between motivation and strategy use so as to ensure causality.

Discipline

Discipline or university major is also regarded as an influential factor in strategy deployment. Politzer and McGroarty (1985) studied the strategic behavior of 37 ESL graduate learners split between social science/humanities and engineering/science majors. Using the *Behavior Questionnaire* developed by the researchers, they found that social science/humanities majors reported a more frequent use of strategies compared to their engineering/science counterparts. The results also revealed that the students in engineering/science group avoided positive strategies, perceived as useful by the researchers. However, as the engineering students were Asian and all of the social science/humanities participants were Hispanic, the authors aptly stated that

cultural background may have confounded the possible difference in discipline and that the piece of finding should be treated as suggestive.

Discipline may be also linked with career status. Oxford and Ehrman (1989) explored the strategy use among a sample of American military officers, language instructors, and professional language trainers with graduate degrees in linguistics. According to the findings, professional linguists, as the participants with the highest career status, reported a greater number and a wider variety of strategies including authentic language use, searching for and communicative meaning, formal model-building, and affective strategies. The researcher concluded that career had a strong influence on strategy choice.

In another study, Oxford and Nyikos (1989) found that university major had a significant effect on strategy deployment as measured by a 121-item version of the SILL. They investigated the strategy use among 1,200 undergraduate students majoring in social sciences (education or humanities), technical fields (engineering, computer, or physical sciences), and business or other subjects. The results indicated that the students majoring in social sciences preferred functional practice strategies (i.e., language practice outside classroom) and resourceful, independent strategies (i.e., memorizing, planning, self-testing, and self-reward) significantly more than students from other majors.

Mochizuki (1999) observed that Japanese university learners majoring in English reported a significantly more frequent use of compensation, social, and metacognitive strategies than science students. Almost a similar finding was reported by Rong (1999) with a sample of Chinese students.

Peacock (2001a) studied the strategy use of 140 university students majoring in science, mathematics, and engineering students. The results showed that the students

majoring in mathematics and engineering used strategies more often than those in physics. Moreover, mathematics students reported using fewer metacognitive strategies compared to other students.

More recently, Peacock and Ho (2003) surveyed 1,006 Hong Kong university learners from diverse disciplines including building and construction, business, computer studies, engineering, English, mathematics, primary education, and science. Overall, students majoring in English reported the most frequent use of strategies, followed by the students in primary education, business, mathematics, science, engineering, and building and construction majors, respectively. Computer studies students had the lowest reported frequency of strategy use. English major students also preferred more cognitive, metacognitive, and social strategies compared to other students. On the other hand, computer studies students had the lowest use of metacognitive strategies. And finally, as for individual strategies, English major students reported a significantly higher use of 26 strategies.

In sum, most studies reported a higher strategy use in favor of humanities students among the students in other majors. This difference was more notable when the sample included students majoring in English language as they might be equipped with a greater awareness of cognitive and metacognitive tools at their disposal.

Cultural background

Another variable affecting learners' strategy use is cultural background, which is sometimes referred to as ethnicity or nationality. Bedell (1993 as cited in Oxford & Burry-Stock, 1995) presented 50-item SILL frequency data obtained from a number of studies on a graph. It was found that students from different cultural groups reported using particular kinds of strategies at different levels of frequency. By the same token, Bedell and Oxford (1996) reviewed 36 studies on cross-cultural

differences in the strategy use of learners from a wide variety of cultural and educational backgrounds and concluded, “Learners often—though not always—behave in certain culturally approved and socially encouraged ways as they learn” (p. 60).

Politzer (1983) found that Hispanic learners were more social and interactive in learning than the Asian learners who had a greater reliance on rote memorization. Similarly, Politzer and McGroarty (1985) studied 37 ESL graduate learners from Hispanic and Asian backgrounds. They reported that students from Hispanic and Asian backgrounds significantly differed in their strategy choice (communicative and social vs. reliance on rote memorization). Asian learners’ preference for rote memorization strategies has been asserted by several researchers (e.g., O’Malley & Chamot, 1990). Moreover, O’Malley (1987) attributed Asian students’ reported lack of success to the persistence of familiar strategies.

Huang and van Naerssen (1987) also stressed Chinese learners’ strong preference for memorization strategies (as a subset of Asian learners) and ascribed it to the traditional Chinese practice of memorizing wisdom as a way to gain knowledge. Bedell and Oxford (1996) explored the strategy use of 353 Chinese EFL university students. In contrast, they found the lowest use of memory strategies among the participants, which was contrary to the popular belief about Chinese learners’ over-reliance on rote memorization strategies. More recently, however, Jiang and R. Smith (in press) conducted an interview-based study and found that memorization was a popular learning strategy for their sample of Chinese learners.

Grainger (1997) surveyed 133 students learning Japanese language from various cultural backgrounds including European and Asian students. No significant difference was found in overall strategy use among European and Asian learners.

However, it was indicated that rote memorization was the least popular strategy category among the students of Asian background. They also preferred more compensation and affective strategies than their European counterparts. Usuki (2000) reported that Japanese students learning English language were typically passive learners due to some psychological barriers to the adoption of effective strategies. The researcher suggested that there should be more cooperation between the teachers and their students in the language classroom.

Griffiths and Parr (2000) found that European students in their study reported employing strategies significantly more frequently than students of other nationalities, especially those strategies related to vocabulary, reading, interaction with others, and the tolerance of ambiguity. In a similar study, Griffiths (2003) surveyed 348 students at a private English language school for international students in New Zealand. The participants came from 21 countries, the majority of which were Asian. According to the results, European students reported using significantly more frequently than their Asian counterparts.

Altan (2004) investigated the reported strategy use of 63 learners studying English Language Teaching. The participants were equally split among three cultural backgrounds: Turkey, Hungary, and China. Turkish learners preferred metacognitive strategies the most and memory ones the least. As for the Hungarian learners, social strategy category ranked the first with affective strategies the last. Chinese participants showed the highest preference for compensation strategies and the lowest for memory strategies. As Altan noted, it was contrary to general conception that Chinese learners in the study reported the lowest use of memory strategies. However, interestingly enough, even in this case, Chinese learners had a higher use of memory strategies compared to their Turkish and Hungarian counterparts.

In sum, learners from different cultural backgrounds appear to be comfortable when using strategies in line with their cultural assumptions. Nevertheless, the inconclusive results for some cultural groups (e.g., Chinese) lead us to welcome Littlewood's (2000) helpful comment about cultural background that "we still have a long way to go in exploring the nature and extent of this influence" (p. 34).

Gender

Being male or female may play a role in strategy choice. The purpose of investigating such a factor, as for other factors, is to find out workable strategies rather than categorizing learners into "a gender-stereotyped set of strategies" (Oxford & Ehrman, 1995, p. 379). However, gender-related differences are not as salient as those of learning style and motivation (Green & Oxford, 1995), but "gender is a significant, defining dimension of our humanity and as such has at least some influence on the way we learn" (Nyikos, 2008, p. 75).

Most studies have reported that females used significantly more strategies compared to males (Green & Oxford, 1995; Kaylani, 1996; Ku, 1997; K. O. Lee, 2003; Mochizuki, 1999; Sheorey, 1999; Sy, 2003). Females' superiority was notably significant in social (Dreyer & Oxford, 1996; Politzer, 1983) and affective strategies (Hashim & Sahil, 1994; Hong-Nam & Leavell, 2006). This is in line with the assertion that women generally have a greater desire for good grades, a stronger need for social approval, a greater willingness to conform to existing norms, and a verbal superiority over male learners (Oxford, Nyikos, & Ehrman, 1988). There are also a number of studies finding no significant gender-related differences in strategy use (Griffiths, 2003; Y. M. Kim, 1995; Nisbet, Tindall, & Arroyo, 2005; Rong, 1999). And finally, a very few studies found that males used strategies more often than females (e.g., Tran, 1988; Wharton, 2000).

In a survey of 374 learners at the University of Puerto Rico, Green and Oxford (1995) found that gender was a significant factor in strategy choice. Female participants reported using more strategies than males. There were also significant differences in the use of memory, metacognitive, affective, and social strategies in favor of females. Moreover, females significantly outdid males in the use of such individual strategies as using flashcards to remember words, reviewing English lessons, connecting words and locations, making summaries, and skimming. On the other hand, only one strategy was reported to be used significantly more frequently by males: watching TV programs and video movies in English.

Y. M. Kim (1995) observed no gender-related difference in strategy use among Korean ESL university learners. Similarly, Rong (1999) reported no significant difference in strategy use by gender among a sample of Chinese tertiary-level students.

Sheorey (1999) examined the strategy use of 1,261 Indian undergraduate students learning English split almost equally between males and females. According to the results, females outdid males in the reported use of all four strategy categories on the questionnaire developed by the researcher. Moreover, there were significant differences in the use of 21 out of 33 individual strategies in favor of females.

Wharton (2000) surveyed 678 bilingual university students learning Japanese or French in Singapore. Unlike most studies, no significant difference was found in overall strategy use with respect to gender; a finding that was “unexpected” (p. 233). Moreover, the results of individual strategies showed significant differences in favor of males.

K. O. Lee (2003) studied the strategy use of 325 Korean EFL learners and reported that females preferred all six strategy categories more often than males. In a

similar vein, Peacock and Ho (2003) found that female university learners in Hong Kong reported using all strategy categories on the SILL significantly more often than their male counterparts. Females also had a significantly higher use of nine individual strategies, most of which were from among memory and metacognitive categories.

Hong-Nam and Leavell (2006) surveyed 55 ESL learners in the US. They found that although females had higher mean differences in most strategy categories, only the mean score of affective strategies was proved to be significantly different.

In sum, in most studies, where any significant difference in overall strategy use was found, it favored females over males. Moreover, the quality of strategies employed by both groups differed in most cases.

Age

Although the common belief is that children are better language learners compared to adults and can attain native-like fluency, the effect of age on the language learning process is generally “far from clear or conclusive” (Spolsky, 1989, p.92). Griffiths (2008a) outlined the influential factors in language learning that interact with age. These include *maturational* (e.g., critical period), *socio-affective* (e.g., anxiety and identity), *individual* (e.g., belief and personality), *cognitive* (e.g., strategic awareness and existing knowledge) and *situational factors* (e.g., learning target and teaching/learning method).

With reference to strategy use, Ehrman and Oxford (1989) pointed out that age did not seem to be a major factor. However, it has been suggested that older learners use more strategies of analytic type due to their greater contextual knowledge while younger learners are more flexible in trying different types of strategies (Chamot & El-Dinary, 1999; Vann & Abraham, 1990). Therefore, students of different ages could

benefit from their own physical and psychological conditions with the use of different learning strategies (Ehrman & Oxford, 1995).

Peacock and Ho (2003) explored the relationship between strategy use and age among a sample of university learners in Hong Kong. They found that more mature participants (i.e., aged 23 and over, 12% of the sample) reported significantly more frequent use of memory, metacognitive, affective, and social strategies than their younger counterparts. Moreover, older students showed a significantly higher preference for 20 individual strategies including being uninhibited about making mistakes in language learning, thinking about their progress, and seeing connections and patterns in English language.

Victori and Tragant (2003) surveyed 766 learners consisting of three age groups of 10, 14, and 17 years old. The results showed that the older two groups used cognitively complex strategies significantly more often than their young counterparts. In addition, the young learners reported a higher use of social strategies. However, in a study of 348 ESL learners in New Zealand, Griffiths (2003) found no significant difference in the participants' strategy use by age.

Magogwe and Oliver (2007) explored the strategy use of 480 students learning English in Botswana. Age was reflected in the participants' levels of education on the assumption that the stage of schooling generally correlates with age. The results were mixed and no specific trend was noticed. The researchers called for more investigations into the relationship between strategy use and age.

In sum, the studies into the effect of age on learning strategies have not generated robust findings and only offered some tentative conclusions. This might be due to the methodological issues that a few studies have isolated age as a focus of investigation (Macaro, 2001).

Beliefs

In the domain of language learning, the relevant aspects of beliefs include the beliefs learners hold about themselves, language learning, and the contexts in which they take part as language learners and language users (C. White, 2008). It has been suggested that such beliefs are mainly influenced by learners' previous experiences as language learners and affected by their cultural background (Horwitz, 1987).

With reference to strategy use, learners' beliefs about language learning as a variable has been often measured by Horwitz's (1987, 1988) the *Beliefs About Language Learning Inventory* (BALLI). This questionnaire consists of five subscales: *difficulty of language learning, the nature of language learning, learning and communication strategies, motivations, and expectations.*

Using a modified version of the SILL and the BALLI, N.-D. Yang (1999) explored the relationship between EFL learners' frequency of strategy use and their beliefs about language learning among 505 Taiwanese university students. She found a positive link between the two variables. The results also suggested that, for instance, a belief in the importance of the need to practice a lot was associated with the strategy of paying attention when someone is speaking in the L2. Likewise, a belief in the value of spoken language was accompanied by a more frequent use of formal oral-practice strategies.

In sum, learners' beliefs provide a logic for their choice of strategies (Wenden, 1986) and could affect the variety and flexibility of strategy use (Abraham & Vann, 1987). Some preconceived beliefs might also restrict learners' range of strategies (Horwitz, 1988).

Learning context

The context or the situation in which learning occurs could have an effect on learners' strategy deployment. Takeuchi et al. (2007) outlined three main sources of the influence of context. Firstly, the role of task and task difficulty in strategy use (Ikeda & Takeuchi, 2000; Oxford et al., 2004). Oxford et al., for example, reported the complex influence of task difficulty and proficiency on strategy deployment. They pointed to the usefulness of task-based strategy assessment because it offers a contextualized view of strategies in that strategy use was tailored to the context of particular language tasks. They also recommended implementing such an assessment along with continuing the use of non-task-based strategy questionnaires since they both serve different but complementary purposes.

The second issue involves learning in the context of ESL or EFL that might exert an influence on both quality and quantity of strategy deployment. Oxford and Ehrman (1995) stated that the frequency of strategy use among ESL learners has been reported to be higher than that of EFL learners. Riley and Harsch (1999) compared the strategy use of 28 ESL Japanese learners in Hawaii with that of 28 EFL Japanese learners in Japan. They found that the two groups employed different strategies. Takeuchi (2003) also reported that the strategy pattern of EFL learners was characterized by an emphasis on particular metacognitive and cognitive strategies not frequently preferred by their ESL counterparts.

And finally, the social context of learning is considered to be another situational variable that might affect the choice of strategies. Inspired by the work of Vygotsky and others, strategies in such a view are associated with both the cognitive activities within an individual learner and the complex systems of relationships developed within social communities. Accordingly, the learner both defines and is defined by

these relationships. Considering learning strategies in light of such a perspective “extends beyond the individual learner and focuses on the classroom and the interactions that constitute it” (Takeuchi et al., 2007).

In sum, the context in which language learning occurs might exert a significant influence on language learning strategy choice. Moreover, setting strategy use in wider social milieus seems promising.

Language proficiency

Language proficiency has been associated with strategy use far more than other independent variables. In studies exploring strategy use, language proficiency, as a research variable, has taken several forms: career status reflecting expertise in language learning (Ehrman & Oxford, 1989), language course grades (Mullins, 1992), language achievement or proficiency tests (Bremner, 1999; Dreyer & Oxford, 1996; Green & Oxford, 1995; Park, 1997; Peacock & Ho, 2003; M.-N. Yang, 2007), entrance and placement examinations (Griffiths, 2003), self-ratings (Hong-Nam & Leavell, 2006; Oxford & Nyikos, 1989; Sheorey, 1999; Wharton, 2000), teachers’ judgment about their students (Magogwe & Oliver, 2007), or a combination of two or more of these measures (Mochizuki, 1999; Shmais, 2003).

Green and Oxford (1995) reported on the strategy use of 374 English learners in Puerto Rico. The measure of language proficiency was the participants’ scores on an achievement test. They found that more proficient learners reported using significantly more cognitive, compensation, metacognitive, and social strategies when compared to their less proficient counterparts. In a study of 305 ESL university learners in South Africa, Dreyer and Oxford (1996) observed that about 45% of the total variance in language proficiency scores on TOEFL was explained by the participants’ strategy use on the SILL.

Sheorey (1999) explored the relationship between the strategy use and proficiency level of Indian learners. The participants were asked to rate their proficiency level on a five-value scale. The researcher excluded the students at the middle point (i.e., *Average*) and used combined values of *Poor* and *Below Average* versus *Above Average* and *Excellent* as low proficiency versus high proficiency groups, respectively. The results of statistical analyses revealed that the students in the high proficiency group had a significantly higher use of strategies compared to those in the low proficiency group.

Wharton (2000) studied the strategy use of 678 university students learning Japanese or French in Singapore. According to the results, those students who rated themselves as *good* or *fair* language learners made a significantly higher use of strategies than self-rated *poor* learners. Moreover, the frequency of strategies in four categories (viz., affective, memory, cognitive, and metacognitive) increased as the learners' proficiency self-rating went up from *poor* to *good*.

Griffiths (2003) explored the relationship between language proficiency and strategy use among 348 ESL learners in New Zealand. She used the participants' scores on a placement test as the proficiency measure. According to the results, higher level students made a highly frequent use of a large number of strategies relating to interaction with others, vocabulary, reading, tolerance of ambiguity, learning systems, management of feeling, management of learning, and utilization of available resources.

Peacock and Ho (2003) surveyed a large sample of university learners in Hong Kong. The measure of proficiency was the scores on the *Hong Kong Advanced Level Use of English* examination, based on which the participants were divided into either *high-*, *mid-*, or *low-proficiency* groups. According to the results, 27 individual

strategies were significantly related to language proficiency. About 59% of these strategies were from cognitive and metacognitive strategy categories and none from affective strategies. In the use of these 27 strategies, “a sharp difference” (p. 186) was observed in terms of proficiency. The students in high proficiency group always or often used 13 strategies whereas the learners in mid- and low proficiency groups always or often employed only two or three of these 27 strategies.

Shmais (2003) surveyed 99 Arabic-speaking EFL learners in Palestine. She used three measures of proficiency: the students’ learning level (i.e., sophomore, junior, senior), the students’ university average in English courses, and language self-efficacy (i.e., how good the students perceived themselves as English learners). The results indicated no significant difference in the use of strategies by proficiency.

Hong-Nam and Leavell (2006) studied the strategy use of 55 ESL university learners in the US with reference to proficiency level. The participants rated their proficiency level as either *beginning*, *intermediate*, or *advanced*. A curvilinear relationship was found between proficiency and strategy use with students at intermediate level reported using strategies significantly more often than their advanced and beginning levels counterparts.

In another study, Magogwe and Oliver (2007) surveyed 480 Botswanan students from primary, secondary, and tertiary levels of education. In terms of language proficiency, the participants were grouped into three groups based on the teachers’ judgments about them. The results indicated that more proficient learners reported a significantly greater use of strategies. This piece of finding was proved to be consistent across all levels of education in the study.

And finally, M.-N. Yang (2007) surveyed 451 female junior college students in Taiwan. The participants’ scores on the English reading and listening mid-term

examinations were taken as the measure of proficiency level. The results indicated that more proficient learners reported using strategies more often than their less proficient counterparts. Moreover, the students at different proficiency levels significantly differed in their use of cognitive, compensation, metacognitive, and social strategies.

In sum, most studies have suggested a positive linear relationship between proficiency and strategy use; that is, more proficient learners used greater number of strategies than the less proficient learners. However, like the motivation factor, in studies into the relationship between language proficiency and the frequency of strategy use, causality could not be claimed because it is not clear whether a higher level of language proficiency leads to a greater use of strategies or students' higher use of strategies is partially responsible for a higher proficiency level. The answer to this "age-old chicken-and-the-egg question" may reside in more longitudinal research to complement the results found in the cross-sectional studies (Griffiths, 2003, p. 381).

skill-based strategies

The basic line of strategy research, especially in the early years, concerned the identification, description, and classification of strategies. Subsequently, the researchers attempted to relate strategy use to a host of factors such as language proficiency, learning styles, and motivation. After the researchers came to recognize strategies as an important aspect of language learning, the investigation of the impact of teaching strategies in the context of different language skills (i.e., listening, speaking reading, and writing) and the areas of grammar and vocabulary gained

considerable momentum (Chamot, 2008; Oxford, 2001a). After all, one primary goal of learners' strategy deployment is language skills development (Ehrman et al., 2003).

To the best of the researcher's knowledge, there exist few studies into the skill-based strategies while taking account of a number of skills at the same time. In one of these attempts and in order to measure the reported skill-based strategy use of 32 learners at a private international institute in New Zealand, Griffiths (2004b) developed a 40-item questionnaire, consisting of ten items for each language skill. She also collected relevant data from semi-structured interviews and classroom observations. According to the results, listening and speaking strategies were reportedly the most frequently used strategies. In terms of individual strategies, the reading strategy of using a dictionary was the most and the writing strategy of keeping a diary as the least frequently employed strategies. The relationship between reported strategy use and end-of-course results did not prove to be statistically significant. Moreover, the interviewees regarded reading strategies as a valuable source for developing oral/aural skills and increasing vocabulary knowledge. Finally, classroom observations suggested that more successful learners employed interactive and communicative strategies more effectively than their less successful counterparts (see also Griffiths & Jordan, 2005).

By the same token, the strategy instruction research has often focused on a single skill rather than a number of them. This is, in part, related to the methodological problems that such studies may entail. However, O'Malley and Chamot (1990) reported on a research attempt to teach 75 high school ESL students how to apply learning strategies to three types of tasks (i.e., tasks related to vocabulary, listening comprehension, and speaking from prepared notes). The program was conducted over a two-week period, and the participants' performance in the instruction group was

compared to that of the students in a control group. The participants were posttested on the same types of tasks. The main findings of the study were as follows:

- Vocabulary learning strategies were effective only for students who had not already developed alternative effective strategies.
- Listening comprehension improved for students instructed in learning strategies on texts that were accessible, not on those that were too difficult and/or for which students lacked relevant prior knowledge.
- Oral reports (presented from written notes) given by strategy-instructed students were judged to be significantly more comprehensible and organized than those of control group students. (Chamot, 2005b, p. 117)

This section will briefly review studies into skill-based strategies together with research on vocabulary, grammar, and translation strategies as important areas that cut across all four language skills. This may include either studies to explore learners' skill-based strategies or those to assess the effectiveness of teaching particular strategies.

Listening strategies

The research on listening strategies was so poor about ten years ago that Vandergrift (1997a) talked about this area as “the Cinderella of strategies.” After over a decade, however, listening has still come to be “arguably the least understood and most overlooked of the four skills” in the classroom (Nation & Newton, 2009, p. 37). This is in striking contrast to the claim that listening should receive special attention since over 50 percent of the time learners spend functioning in a foreign language is devoted to listening, which is the primary means of acquiring the target language (Nunan, 1998; Rost, 2005; Vandergrift, 2004).

There are several problems and difficulties faced by L2 learners in real-time listening. Learners may have problems with recognizing word forms and keeping up with what is coming in, making out individual words in a stream of speech, having

enough time to turn perceived form into an appropriate message, and dealing adequately with the speed of text delivery (Goh, 2000; Graham, 2006). Lynch (2002) attributed this to the complexities involved in listening. Likewise, most learners ascribed such difficulties to their own perceived low ability in the skill or to the difficulty of the listening tasks and texts “with little awareness shown regarding the role played by ineffective listening strategies or skill application” (Graham, 2006, p. 165).

G. White (2008) claimed that effective listeners generally draw on three different areas of knowledge: *linguistic*, *schematic*, and *contextual*. Linguistic knowledge is related to the system of language including phonology, stress, intonation, lexis, and syntax. Using this type of knowledge, listeners perceive the incoming sounds, store them in working memory, and separate the information into manageable segments. Schematic knowledge refers to the knowledge of how discourse is organized, how language is used in a particular society, and the topic being talked about. Finally, contextual knowledge concerns the physical setting in which the message is produced, the participants, their relationship, and the like.

Numerous studies indicated that conscious and effective use of strategies could enhance the chance of success in L2 listening (e.g., Carrier, 2003; Goh, 1997; Graham, Santos, & Vanderplank, 2008; Ozeki, 2000; Ross & Rost, 1991; Thompson & Rubin, 1993, 1996; Vandergrift, 1997a, 1997b, 2002, 2003). A number of such studies have focused on whether more successful learners can be differentiated from the less successful ones by their strategy use. Some strategies were found to be common among more proficient listeners (e.g., listening to chunks of language rather than focusing on individual words and avoiding direct translation while listening). Such strategies were mostly metacognitive ones such as comprehension monitoring,

applying an advance organizer, deciding on the purpose of listening, and trying to pay attention to main/specific points (Macaro, Graham, & Vanderplank, 2007). By the same token, Rost (2002) reported on five strategies that appeared to be associated with success more than other listening strategies:

- Predicting information or ideas prior to listening
- Inferring from incomplete information
- Monitoring comprehension
- Asking for clarification
- Providing a personal response to what has been heard

Thompson and Rubin (1996) taught a wide range of listening strategies to 24 third year Russian learners at a university in the US. The program that lasted an academic year included instructing cognitive (e.g., listening to familiar words and resourcing) and metacognitive strategies (e.g., defining goals and monitoring listening). Students in the experimental group showed significant improvement on a video comprehension posttest compared to the students in the control group. Moreover, the former displayed a metacognitive awareness through their ability to select and manage the strategies that would help them comprehend the videos.

Building on Ross and Rost (1991), Ozeki (2000) based the listening strategy instruction on the strategies students had reported using least frequently. The participants were Japanese college women learning English. The instruction was provided during twelve 90-minute classes distributed over a 20-week semester. The comparison of pretest and posttest scores of the students in the experimental group revealed their development of listening comprehension ability, increased use of learning strategies, positive attitudes towards strategy instruction, the transfer of strategies to new tasks, and the durability of strategy use after the completion of strategy instruction.

Vandergrift (2002) reported on a metacognitive strategy awareness study with 420 children learning French in different Grade 4-6 classes in Canada. Three tasks were employed in the study: listening for what to feed animals, listening to descriptions of five families and matching the descriptions with pictures, and listening to answering machine messages and matching activities on the checklist with the name of the person who suggested it. The learners responded to at least one of these three tasks and a guided reflection activity. After doing each task, teachers engaged the students in reflective exercises to determine how they approached the tasks. The results indicated that the participants had a high level of awareness of their strategies for listening to materials in French. They were able to successfully identify the strategies they deployed while engaged in the listening tasks. Their use of metacognitive strategies of planning, monitoring, and evaluation during the listening was, in particular, clear.

Reflection on the process of listening can raise awareness and help L2 learners develop the strategic knowledge for successful L2 listening (Vandergrift, 2008). One way to raise this awareness and positively influence the students' attitudes and perceptions of the listening process is completing questionnaires such as the *Metacognitive Awareness Listening Questionnaire* (Vandergrift, Goh, Mareschal, & Tafaghodatari, 2006).

In another study of French as a second language university students, Vandergrift (2003) tried to raise the awareness of the listening processes through tasks designed to develop effective listening strategies. He employed a multiple choice listening test to divide 36 French learners into more and less skilled listeners. The results revealed that more skilled listeners used significantly more comprehension monitoring and metacognitive strategies in general compared to less skilled ones, who used direct

translation more often. This suggested that the former group were more in control of their listening processes by effectively employing metacognitive strategies (see also Vandergrift, 1997b). This piece of finding, which was also reflected in the analysis of think-aloud protocols, suggested that more skilled listeners employed an effective combination of cognitive and metacognitive strategies, and they could also construct more meaning from what they hear because of more linguistic knowledge.

Carrier (2003) undertook listening strategy instruction with a sample of high school ESL students. The study involved academic listening tasks during a six-week instruction of selective attention to various aspects of the text and note taking. Pretest and posttests showed significant improvements in the learners' listening comprehension.

In a longitudinal study, Graham, Santos, and Vanderplank (2008) investigated the listening strategy use of two lower-intermediate learners of French in England over a period of six months. Based on the results of a recall protocol completed after listening to short passages, one learner was considered a high scorer and the other one a low scorer. Data were collected from verbal self-reports on the strategies used by these participants when answering multiple-choice questions on a French listening comprehension passage at two time points, six months apart. The researchers sought answer to the question, "How does strategy use develop over time in students who score differently on a listening test?" (p. 55).

According to the findings, there were differences in strategy use at both time points between the high scorer and the low scorer in the listening proficiency test. The former was willing to acknowledge the provisional nature of his interpretations when he was in doubt. He also used a number of metacognitive strategies such as comprehension monitoring and double-checking, questioned his interpretations, and

displayed a great ability to identify the key information. The low scorer, in contrast, used strategies consisted largely of prediction of lexis, writing visual prompts, and selective attention, which for her meant listening out for particular words. She also showed an infrequent use of comprehension monitoring. Moreover, both students remained fairly consistent in their strategy use over the six-month period.

Speaking strategies

Interest in the speaking skill as a form of oral communication is not new, and the development of speaking abilities in the L2 has long been in focus. However, communicative approach brought the speaking skill into prime focus (Littlewood, 1981; Widdowson, 1978). Speaking is the most challenging language modality for strategy instruction because the deliberate use of a strategy could hamper the flow of natural speech (Chamot, 2005b). Speaking strategies, often referred to as communication strategies, were regarded as a key interlanguage process (Selinker, 1972). Speakers use communication strategies to resolve difficulties they encounter in expressing an intended meaning. Such strategies are more common in communication between individuals who do not share proficiency in the same language, probably because there are more referential difficulties in such conversations (Tarone, 2005).

Several studies showed that strategy instruction could improve performance in speaking skill, especially when metacognitive and awareness-raising strategies are the focus of instruction (e.g., Cohen & Olshtain, 1993; Cohen, Weaver, & Li, 1998; Dadour & Robbins, 1996; Dörnyei, 1995; Kawai, 2008; McCarthy & O’Keeffe, 2004; Nakatani & Goh, 2007; O’Malley & Chamot, 1990).

Cohen and Olshtain (1993) videotaped 15 learners taking part in role play situations with a native speaker of English. Six speech act situations were offered for each learner (viz., two apologies, two complaints, and two requests). Then, the

participants were asked to think aloud retrospectively in their L1 as to how they assess, plan, and execute their spoken utterances. The results showed that the learners employed four main strategies: planning to use specific vocabulary and grammatical structures, thinking in two languages, trying a variety of ways in searching for language forms, and not paying much attention to grammar or to pronunciation.

Dadour and Robbins (1996) conducted explicit strategy instruction in Egypt. The measure of oral proficiency was role-plays conducted as pretest and posttest. The participants also filled in an Arabic version of the SILL. The results indicated that the students in the experimental group outdid those in the control group on the oral proficiency tests. In addition, the former reported using more strategies than the control group.

Cohen et al. (1998) explored the impact of strategy instruction on college foreign language students over a ten-week period. The intervention group received instruction in learning strategies for speaking tasks. Students were pretested and posttested on speaking tasks and on the SILL. Moreover, a sample of students provided think-aloud data as they were completing task checklists. On the whole, the results indicated that integrating strategy instruction into the language course was beneficial to students. Furthermore, a comparison was made between the results from the checklists and those obtained from the SILL. While the strategy checklist proved itself effective as an instrument for linking task-specific strategies with improved task performance, the SILL performed more as a general measure of the patterns of strategy use. However, certain items on the SILL (e.g., the use of idioms, previewing lessons, attention to language form, avoiding the use of translation, and remembering words by their image) were proved to be sensitive enough to correlate significantly with increases on ratings scales for the various tasks.

Nakatani (2006) surveyed the oral communication strategy use of 400 female Japanese university students. He developed and employed a questionnaire, called the *Oral Communication Strategy Inventory (OCSI)*, for assessing strategies for coping with speaking problems and with listening problems during communication. The participants were subdivided into high and low oral proficiency groups based on their scores on an oral communication test. The results indicated that there was a significant difference in the students' awareness of strategy use with reference to their oral proficiency level. When compared to lower level learners, those in the high proficiency group reported using negotiation for meaning strategies on the OCSI such as making comprehension checks and paying attention to the listener's reactions. The higher level learners also made a greater use of strategies for maintaining conversational flow such as paying attention to the speaker's pronunciation, rhythm, and intonation and also strategies for controlling affective factors such as enjoying the conversation. Based on these findings, Nakatani concluded that "it is important to introduce for future curriculum development specific strategy training that focuses on raising learners' awareness of such positive strategies" (p. 162).

And finally, Kawai (2008) listed three groups of strategies often employed by more proficient speakers:

- strategies to facilitate the development of underlying oral skills such as the rules of intonation and turn taking.
- strategies to facilitate the completion of particular speaking tasks such as rehearsing particular communication situations.
- strategies to facilitate better oral communication skills such as learning useful vocabulary and formulaic expressions.

The importance of the latter group (i.e., social functions in speaking such as apologizing, complaining, making requests, refusing invitations, and complimenting) has been repeatedly highlighted (e.g., Cohen, 2008).

Reading strategies

L2 reading has captured “unprecedented research attention” (Koda, 2005, p. vi). This lies in the fact that reading can serve as an invaluable source of authentic language that is “always meaningful, often in fully grammatical form, and that includes every feature of the target language but pronunciation” (Eskey, 2005, p. 563).

Successful readers often employ strategies that are cognitive, metacognitive, and compensation in nature. They engage in predicting and guessing, access background knowledge related to the topic of the text, guess the meaning of unknown words, reread the entire passage, identify main ideas, and monitor comprehension. Poor readers, on the other hand, tend to process text in a word-for-word fashion and focus on grammatical structure, sound-letter correspondences, individual words meaning, and text details (Eskey, 2005; Gascoigne, 2008; Grabe, 2002; Hosenfeld, 1977; Ikeda & Takeuchi, 2006; Schramm, 2008; Zhang & Wu, 2009).

Hosenfeld (1977) investigated the reading strategies of a sample of successful and unsuccessful learners of French, Spanish, and German. The participants’ success or otherwise was determined by their scores on a standardized reading test. Analyzing think-aloud protocols, Hosenfeld found that more successful readers employed the strategy of contextual guessing based on the inductive reasoning. Moreover, it was found out that successful readers (pp. 120-121):

- keep the meaning and context in mind as they read.
- read or translate in broad phrases.
- skip words that they views as unimportant to total phrase meaning.
- skip unknown words and use the remaining words in the sentence as clues to their meaning.
- look up words only as a last resort.
- have a positive self-concept as readers.

In contrast, unsuccessful readers:

- lose the meaning of sentences as soon as they decode them.
- read or translates in short phrases.
- seldom skip words as unimportant since they view words as “equal” in terms of their contribution to total phrase meaning.
- have a negative self-concept as readers.

N. J. Anderson (1991) explored the individual differences in strategy use among ESL university students while engaged in two reading tasks: taking a standardized reading comprehension test and reading academic texts. The results indicated that there was not any single set of processing strategies that significantly contributed the success of the two reading measures. Both groups of readers who scored high and low seemed to use similar strategies while reading and answering the comprehension questions in the tests. N. J. Anderson concluded that “strategic reading is not only a matter of knowing what strategy to use, but also the reader must know how to use a strategy successfully and orchestrate its use with other strategies” (pp. 468-469).

Based on the data, N. J. Anderson (1991) also identified 47 strategies in five categories of supervising, support, paraphrase, coherence, and test taking. Both top-down (e.g., skimming a text before reading and formulating specific questions that the text might be expected to answer) and bottom-up strategies (e.g., reading without stopping to look up words in the dictionary) emerged in all five categories, lending support to an interactive conceptualization of reading (Urquhart & Weir, 1998).

Sheorey and Mokhtari (2001) constructed the *Survey of Reading Strategies* (SORS) to measure the metacognitive reading strategies of L2 readers engaged in reading academic materials. The instrument consisted of three subsections including *cognitive*, *metacognitive*, and *support strategies* (i.e., support mechanisms intended to aid the readers in comprehending the text such as using a dictionary and taking notes).

Using the SORS, the researchers surveyed 150 native English-speaking and 152 ESL students. The results showed that ESL students reported a higher use of strategies than native speakers. The former also reported using a greater number of support reading strategies. Moreover, no significant difference was reported between male and female readers. And finally, students who had a higher self-reported reading rating reported using a higher frequency of reading strategies than those readers who gave themselves a lower rating (see also Mokhtari & Sheorey, 2002).

Building on Ikeda and Takeuchi (2003), Oxford et al. (2004) explored the effect of task difficulty in reading comprehension and the use of strategies among ESL college students. Having done two reading tasks (one easy, one difficult), the participants were classified as either more or less proficient readers based on their scores on the tasks. All the students also responded to a questionnaire about their strategy use for the two readings. Based on the results, little difference in strategy use for the easy reading task between more and less proficient readers was noticed. As for the more difficult reading task, however, less proficient students actually used more strategies than their more proficient counterparts. This finding was ascribed to the fact that the difficult reading task was actually not much of a challenge for the higher proficiency students, and they did not need to use many learning strategies.

Zhang and Wu (2009) explored the reading strategy use of 270 senior high school students in China. The participants responded to a later version of the SORS (Mokhtari & Sheorey, 2002). The instrument included three subsections: *global reading strategies* (e.g., metacognitive strategies such as having the purpose in mind and previewing the text), *problem-solving strategies* (e.g., cognitive strategies such as adjusting reading speed and rereading the text), and *support strategies* (e.g., strategies such as using a dictionary and taking notes) The results indicated that the students

preferred to use the three strategy categories on the SORS at a high-frequency level. The high proficiency group outdid both the intermediate and the low proficiency groups in both global and problem-solving reading strategies. In terms of individual strategies, guessing and predicting the content and using contextual clues were chosen most frequently. Moreover, translating from English into the L1 and thinking about information in both English and the L1 were used least often.

Writing strategies

Writing in a second or foreign language is the most difficult of the skills in which to achieve communicative competence (Chamot, 2005b). Successful language writers tend to plan the content and organization of the text, struggle to find a way to express the intended meaning, evaluate and refine their lexical and syntactic choices, and monitor the writing process throughout (Bloom, 2008; Hedgcock, 2005; Manchón, Roca de Larios, & Murphy, 2007). Several studies reported on the positive and often long-lasting effect of strategy instruction on how students go about writing tasks, how confident and autonomous they become, and the quality of the essays produced (e.g., Aziz, 1995; Cresswell, 2000; Macaro, 2001; Sasaki, 2004; Silva & Brice, 2004).

Macaro (2001) conducted a writing strategy instruction with six classes of secondary students of French in England over a period of five months. The instruction involved various writing strategies including the metacognitive strategies of advance preparation, monitoring, and evaluating. Pretests and posttests included questionnaires, writing tasks, and think-aloud interviews during a French writing task. Based on the results, the students in the experimental group made significant gains in the grammatical accuracy of their writing. Moreover, their approach to writing changed; in other words, they reported becoming less reliant on the teacher, more selective in their dictionary use, and more careful about their written work.

Olivares-Cuhat (2002) found that the use of cognitive and memory strategies could account for 44% of variation in the participants' composition grade. Aziz (1995) also emphasized the importance of cognitive strategies in developing writing proficiency. However, she found that those students who used both cognitive and metacognitive strategies in their L2 writing outperformed those who used cognitive strategies alone, lending support to the claim that learners with control over a wider variety of strategies are more successful (O'Malley & Chamot, 1990).

You and Joe (2002) investigated the strategies nine EFL learners in Taiwan used in solving problems of incoherence in their writing. Having written a composition, the participants were interviewed concerning their writing strategies in sections of the essay that were not coherent. Based on the responses, three reasons were identified. First, the subjects failed to apply the writing strategies that they were aware of for handling difficulties in writing. Second, the writers had a limited number of strategies that they deployed during their writing. Finally, given the limited amount of time for the writing task, writers did not feel that they had sufficient time to monitor their strategies and produce the required composition. The researchers concluded that the participants lacked such metacognitive strategies as planning (e.g., preparing for a writing task), monitoring (e.g., being aware of strategy use during writing), and evaluating (e.g., assessing the effectiveness of the strategies being used with respect to the writing goal).

Using a modified version of the SILL, Baker and Boonkit (2004) surveyed 149 second year undergraduate students at a university in Thailand in terms of their reading and writing strategies. A small number of the participants were also interviewed regarding their responses on the questionnaire, and some others were requested to complete language learning journals. In terms of writing strategies, using

background knowledge and using a dictionary to check things before or when writing were favored most frequently. The analysis of journal entries and interview scripts also provided support for the learners' frequent recourse to the dictionary while writing. On the other hand, making a timetable for doing writing and writing a draft in the L1 first and then translating it into English were chosen least often.

Gordon (2008) conducted informal interviews with two successful language writers at a private tertiary educational institute in New Zealand. Acknowledging that the results could not be generalized, she found out that "students who learn to write successfully in a new language share several common characteristics" (p. 253). The learners used a wide variety of strategies for developing their writing skills such as reading a lot in the target language, attending to vocabulary and grammatical patterns while reading, creating ample opportunities to write outside the classroom, and planning, monitoring, and revising the passage for relevance and clarity.

Vocabulary learning strategies

Vocabulary knowledge plays a pivotal role in both receptive and productive skills, and this recognition has gained considerable momentum since the early 1990s (e.g., Carter, 1998; Coady & Huckin, 1997; Klapper, 2008; Moir & Nation, 2008; Nation, 1990, 2001, 2005; Nation & Meara, 2002; Pavičić, 2008; Read, 2004; Schmitt, 2000; Schmitt & McCarthy, 1997).

Vocabulary learning is the area where strategic instruction would be particularly beneficial for learners (Ellis, 1994; Nation, 2001). Based on the results of studies into vocabulary learning strategies, Schmitt (1997) made three general conclusions:

- most learners are aware of the importance of vocabulary learning, and they use more strategies for learning vocabulary than for other linguistic aspects.

- mechanical strategies such as memorization and repetition are used more often than strategies that involve deep processing, such as guessing, imagery, and the keyword technique.
- successful learners use a wide variety of strategies and take the initiative to manage their own vocabulary learning.

Moir and Nation (2008) suggested that learners need to become comfortable using a few important vocabulary learning strategies including using flash cards, using word parts (i.e., knowing common affixes), using mnemonic techniques (especially the keyword technique), using a dictionary, and guessing from context. The last three strategies deserve special attention.

Concerning guessing, Nation (2001) advised that “in any list of vocabulary learning strategies, guessing from context would have to come at the top of the list.... It deserves teaching time and learning time” (p. 262). Ninety-eight percent of the running words in the texts that are used for guessing should be already familiar to learners. This means that there should be a substantial amount of comprehensible supportive context for each unfamiliar word, on average about 50 familiar words (Nation, 2005).

Dictionary use is one of the most popular vocabulary learning strategies. Training in the use of dictionaries can have benefits both for receptive and productive vocabulary knowledge (Fan, 2003; Nation, 2001, 2005; Nyikos & Fan, 2007; Schmitt, 2000). However, few learners actually master the required skills to look up words efficiently, and learners often make the least of dictionary use. Nation (2001) stated that there are three distinct components in knowing a word. They include *form* (e.g., pronunciation, spelling, word parts), *meaning* (e.g., word meaning, synonyms, antonyms) and *use* (e.g., examples, register, collocations, grammatical patterns). Empirical evidence suggested that learners often devote much attention to form and

meaning to the exclusion of the use component. Harvey and Yuill (1997) investigated learners' reasons for looking up words in a monolingual dictionary. The participants chose checking on the spelling and confirming the meaning as the most frequently reasons. In contrast, the least majority of look-ups were related to finding the collocations, checking on the register, and finding about the grammar of the word.

Keyword technique, as a type of mnemonic association, is a deep approach that links the form of a word to its meaning. A mother tongue word is chosen (i.e., the keyword) that sounds like the L2 item to be learned and allows the learner to make an association between the two (Klapper, 2008). The studies of the effectiveness of the keyword technique indicated its superiority over mechanical rote learning. Studies suggested that the technique is quick and efficient and that results are typically 25% higher than for ordinary rote learning (Nation & Meara, 2002). This strategy is rarely used unless it has been trained.

Cohen and Apeh (1981, see also 1980) studied the effectiveness of mnemonic associations in the retention of vocabulary over time. They detected eleven categories of associations employed by the students that seemed to facilitate vocabulary retention. They also found out that poor deployment of memory techniques, inductive inferencing, and deductive reasoning hindered vocabulary learning and retention over time. The researchers concluded that deep processing proved to be more effective than rote repetition strategies in vocabulary learning (see also Hulstijn, 1997; Schmitt, 2000).

Gu and Johnson (1996) examined the relationship between vocabulary size and L2 English proficiency and the reported use of strategies among 850 learners. The results showed that a focus on word form, on written repetition, and on memorization strategies did not correlate well with either of the language measures used in the

study. Moreover, significant correlations were found for strategy groupings such as selective attention (i.e., knowing which words to focus on), self-initiation (i.e., seeking out vocabulary for oneself), contextual guessing, and dictionary look-up.

Schmitt (1997) explored the vocabulary learning strategies used by English learners in Japan. The participants were asked to complete a questionnaire, mark which strategies they used, and add any other strategy that came to their mind. They were also asked to evaluate the helpfulness of each strategy regardless of whether they actually used it or not. The results indicated that the most frequently reported strategy was the use of a bilingual dictionary, followed by guessing the meaning of words from textual context. The least popular among the participants was the strategy of comparing English with Japanese words (i.e., checking for L1 cognates), which was not surprising given the fact that the two languages are so different that cognates are virtually nonexistent in Japanese. Schmitt also proposed a taxonomy of vocabulary learning strategies under two main categories: *discovery* and *consolidation*. Strategies in the former group are used for initial discovery of the meaning of words (e.g., guessing from textual context). On the other hand, consolidation strategies are used for remembering words (e.g., connecting the word to its synonyms and antonyms).

Fan (2003) surveyed 1,067 students learning English in Hong Kong using a vocabulary learning strategies questionnaire developed by the researcher. The participants were also asked to rate the perceived usefulness of strategies. In addition, a vocabulary test was conducted to determine learners in low and high proficiency groups with respect to vocabulary knowledge. On the whole, the results showed that although the students considered vocabulary learning strategies as useful, they only sometimes used them. Strategies used most often and perceived as most useful were among the strategies for reviewing and consolidating the knowledge of known words

(e.g., recalling the meaning of the word already learned to help understand the context while reading). The participants also expressed a strong preference for dictionary strategies (e.g., using a dictionary to find out the meaning of new words and the grammatical pattern of the word).

In contrast, strategies used least often and perceived as least useful were related to rote memorization (e.g., studying wordlists at the back of course books and readers) and association strategies (e.g., using sound and meaning associations and linking the word to an L1 word with similar sounds). Moreover, compared to low proficient learners, those in high proficiency group reported using significantly more often a wide range of strategies including guessing and dictionary strategies even when they did not perceive them as useful. However, memorization strategies including repetition, grouping, and association were totally absent among their strategies.

Based on the findings, Fan (2003) concluded that an effective approach to vocabulary teaching should include “helping students see the relevance of strategy use in learning L2 vocabulary, introducing them to the strategies used often by proficient vocabulary learners and, most important, encouraging them to develop their own effective strategies for learning” (p. 235).

Grammar strategies

While attending to grammatical patterns was regarded as one characteristic of successful language learners (Naiman et al., 1978; Rubin, 1975), the area of strategies used for developing grammatical knowledge has been the most neglected area in dire need of further research (A. D. Cohen, personal communication, July 31, 2007). This led Oxford and K. R. Lee (2007) to call grammar strategies the “Second Cinderella,” the first being listening strategies. By the same token, Larsen-Freeman (2001) referred to *grammaring* as a fifth skill area to underscore its importance that deserves the

researchers' closer attention. However, there is a dearth of studies that specifically target the identification of the learning strategies that L2 learners use to learn and understand the elements of grammar (N. J. Anderson, 2005; Broady & Dwyer, 2008).

Some grammar strategies include writing grammar rules and examples on note cards/flash cards, reviewing such cards often, making visual aids like a chart or tree to help memorize grammatical rules, repeating and memorizing new grammatical rules, and using a dictionary or grammar book to find out about a particular grammatical point. Such strategies have been often subsumed under cognitive strategies (Bade, 2008; Oxford & K. R. Lee, 2007).

The importance of grammar-focused strategies was first highlighted in the GLL studies. Successful language learners are characterized by their ability to combine attention to language both as communication and as a system. They approach language learning both inductively and deductively. They ask for a correct form, consciously apply grammatical rules when speaking, practice corrected forms, and extend them to other contexts (Naiman et al., 1978; Rubin, 1975, 1981).

Griffiths (2003) explored the strategy use of 348 students at a private English language school in New Zealand. She identified nineteen strategies as “plus strategies”; that is, those strategies reportedly used highly frequently by advanced students in addition to the high frequency strategies used across all levels. Griffiths categorized these strategies into eight subgroups: interaction with others, vocabulary, reading, the toleration of ambiguity, the management of feelings, the management of learning, utilizing available resources, and language systems. The inclusion of the last grouping, consisting of strategies such as trying to find patterns in English, highlights more proficient learners' awareness of the efficiency of grammar strategies.

Translation strategies

Translation strategies have been often subsumed under cognitive or compensation strategies in most strategy taxonomies. Like grammar and vocabulary learning strategies, translation strategies cut across all four skills (Cohen & Weaver, 2005). For example, learners may translate strategically when they listen to someone talking or listen to a TV show. They may just translate certain words or phrases to help in comprehension rather than attempting to translate everything. A strategic use of translation in reading would also mean not embellishing the text with translations, but rather finding the words and phrases that must be translated for basic comprehension. Likewise, translation strategies may help in effective speaking and writing. Many students prefer to think in the target language and to translate as little as possible from their native language. In writing, in fact, a percentage of learners may prefer to write out their text in their native language first and then translate it into the target language.

The use of the L1 as a strategy is particularly useful in the writing skill. In the writing process, the first language is often used as a compensation strategy in early stages of learning to deal with problems and to assist in producing texts in L2. As proficiency in L2 writing develops, the reliance on the first language is gradually reduced (Manchón et al., 2007). The L1 may be used to translate key words or phrases (Sasaki, 2000) or to think through L2 writing process (Cohen & Brooks-Carson, 2001). One important use of strategic translation in writing is using an L1 word or phrase as a placeholder in the text. This allows the writer to focus on the flow of ideas rather than their lexical and grammatical accuracy. The writer may come back to that phrase at a later time and use another cognitive strategy, such as a resource or the development of substitutes, to solve the language issue (Bloom, 2008). Nevertheless,

the overuse of strategic translation and relying too much on the L1 may hamper L2 written fluency, organization, clarity, syntactic complexity, and vocabulary use (Cohen & Brooks-Carson, 2001; Sasaki, 2000).

Some studies have found that lower L2 proficiency language writers could benefit from composing the essay in the L1 and then translating it into the L2. This piece of finding highlights the importance of using L1 composing strategies for lower L2 proficiency writers. By the same token, Jones and Tetroe (1987) reported on the effect of L1 use during L2 writing. They found that lower L2 proficiency writers who did not use their L1 were less effective in their planning. Language writers who did use their L1 produced more details during the planning stage of L2 writing. Furthermore, the L1 facilitated more abstract thought during planning.

Cohen and Brooks-Carson (2001) explored the effect of translation from the L1 as a learning strategy on the quality of essays produced in French by a sample of university students. Students were provided with prompts in the target language and instructed to write the essay either directly in French or first in their L1 and then to translate it to French. Strategy checklists completed after students wrote the essays showed that students writing directly in French reported less thinking in English during the composing process, and their essays were also rated higher than those who had gone through the translation process.

2.4. Learning Styles and Strategies

Several researchers have argued that learning styles and learning strategies are especially viewed intertwining with each other (e.g., Ehrman et al., 2003; Ehrman & Oxford, 1990; Leaver, Ehrman, & Shekhtman, 2005; Oxford, 1989, 2001b; Reid, 1995, 1998; Rossi-Le, 1989, 1995).

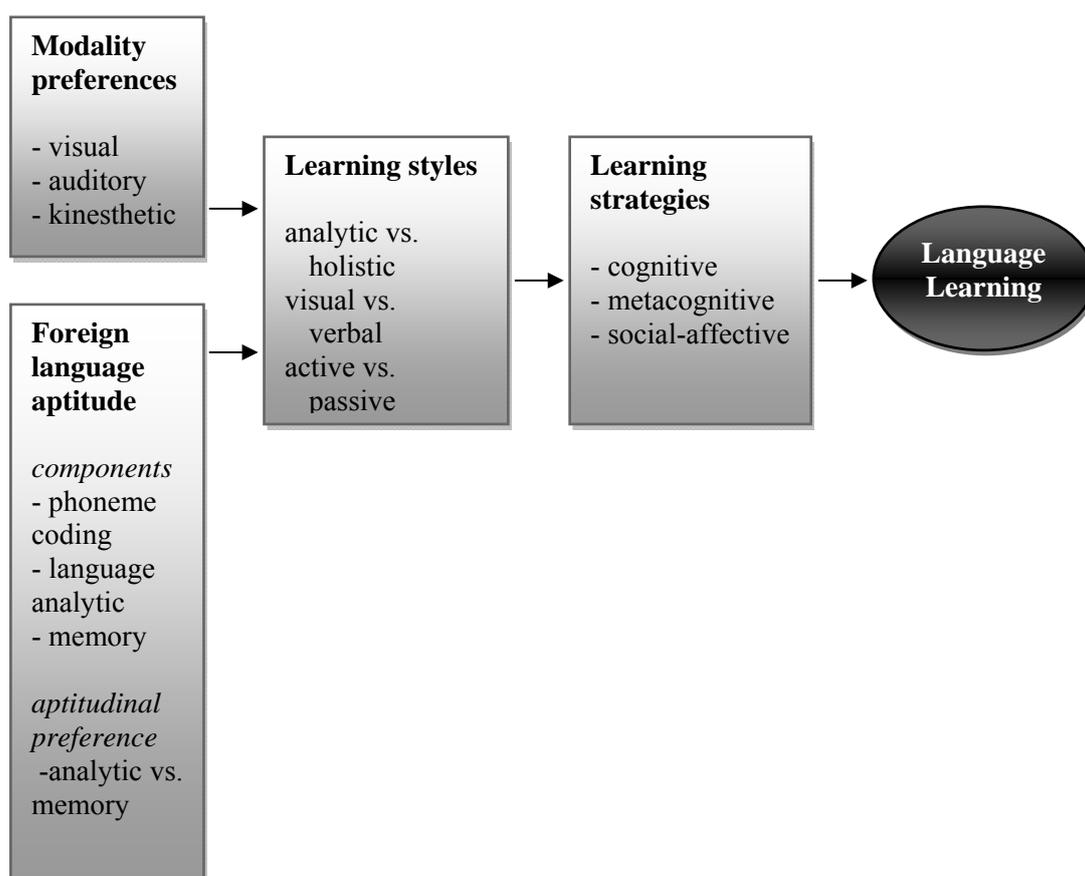
Schmeck (1988) argued that learning styles and learning strategies are closely related, as a learning style refers to a habitual, cross-situational use of a set of learning strategies. Reid (1987) pointed out that “unconscious or subconscious learning styles can become conscious learning strategies” (p. 101).

Ehrman (1996) also stated that “just as situations determine which hand to use (write with one hand, grip jars to open with the other), so they also have considerable influence on choice of learning strategies associated with one learning style or another” (p. 53). By the same token, Flowerdew and Miller (2005) advocated a strategy-based approach to language teaching in which the students’ learning styles are also taken into account.

Empirical studies have also shown the results that students with different learning styles would choose different learning strategies that are consistent with or similar to their habitual learning modes (e.g., Rossi-Le, 1989). As Yamamori, Isoda, Hiromori, and Oxford (2003) reported, it is not sufficient to only understand the individuals’ overall strategy use; the differences among each individual should be taken into consideration. However, it is not easy for teachers to distinguish every student as a totally different learner from others and to prepare the best lessons to fit each of them.

Skehan (1998) proposed an introductory model of individual differences in language learning. In this model, four classes of individual differences have been highlighted: *modality preferences*, *foreign language aptitude*, *learning styles*, and *learning strategies* (see Figure 2.3 on the next page).

Figure 2.3. A Model of Learner Differences and Language Learning



Note. Adapted from Skehan (1998).

According to Skehan (1998), modality preferences, as a subcategory of learning styles, concerns the preferred input channel; that is, visual, auditory or kinesthetic. The next class of individual differences, language aptitude, involves the ability of phonemic coding, language analytic capacity, and memory, suggesting that the learner can have either an analytic or a memory predisposition. Learning styles are related to a range of cognitive dimensions including holistic versus analytic processing and visual versus verbal representations. In addition, the learners' personality aspect of style may be either passive or active. And finally, the fourth class of individual differences is related to learning strategies. Skehan adopted O'Malley and Chamot's (1990) classification of learning strategies into three categories of metacognitive, cognitive, and socioaffective.

What is important in the model is the left-to-right movement that implies “progressively greater degrees of malleability for the learner difference concerned” (Skehan, 1998, p. 267); that is, the extent to which individual differences are amenable to change through instruction. It suggests that language aptitude and modality preferences are rather stable features. However, learners can learn how to exploit and stretch them to the best degree possible. Likewise, individuals can often modify their range of learning styles. On the other hand, learning strategies are the most amenable to change of all classes in the model. In other words, instruction can affect their development and use. Such an instruction should also take into consideration less amenable aspects of individuals including learning styles.

2.4.1. Styles- and strategies-based instruction

In line with the close relationship between learning styles and learning strategies, it has been argued that the positive effect of strategy instruction is maximized if teaching is specifically tailored to students’ style preferences. This has come under the label of SSBI, which has been defined as “a learner-focused approach to language teaching that explicitly combines styles and strategy instructional activities with everyday classroom language instruction” (Cohen & Weaver, 2005, p. 5; see also Cohen, 2002; Cohen & Dörnyei, 2002). In this approach, the teacher helps learners develop an awareness of their own preferred learning styles, determines the nature of their current learner strategy repertoire, and complement their strategy repertoire with additional strategies that suit their styles. There are five components or steps to SSBI:

1. Strategy Preparation
2. Awareness Raising
3. Strategy Instruction
4. Strategy Practice
5. Personalization of Strategies

In the first step, learners' current repertoire of strategies is identified. Learners often know a good deal of strategies, but they might not use them systematically or well. Next, through the use of various tasks, learners' general awareness of several areas is explicitly raised. These areas include what the learning process may consist, learners' learning style preferences, the kinds of strategies they already used as well as those suggested by the teacher or classmates, and the amount of responsibility that they take on for their learning.

The third step, strategy instruction, involves explicit teaching of how, when, and why certain strategies (whether alone, in sequence, or in clusters) can be used to facilitate language learning. Accordingly, the teacher describes, models, and gives examples of strategies. After knowing about strategies, learners should be provided with ample opportunities to try it out in various activities. In these activities, there should be an explicit reference to the strategies in focus. This could be achieved by either planning the strategies that learners will use for an activity, directing their attention to the use of particular strategies while being used, or debriefing learners' use of strategies and their effectiveness after doing the activity.

And finally, strategies become personalized for each learner by evaluating how particular strategies were used and looking for ways of deploying them in other contexts. On the whole, "the future looks bright for SSBI work" (Cohen, 2002, p. 59) since it tries to cater to two important learning aspects (i.e., styles and strategies) at the same time. The interested reader is referred to Cohen and Weaver (2005) for a wealth of materials and activities for conducting such an approach.

2.4.2. Studies pertaining to learning styles and strategies

As Oxford (1989) claimed, the relationship between learning style preferences and strategies has not received due attention. In the extant literature, nevertheless, learning strategies have been related to different representations of learning styles including personality types and sensory preferences. The nature of such a relationship suggests that “students with different learning styles (e.g., visual, auditory, and hands-on; reflective and impulsive; analytic and global; extroverted and introverted) often choose strategies that reflect their style preferences” (Green & Oxford, 1995, p. 292).

Using the MBTI and an earlier version of the SILL, Ehrman and Oxford (1989) surveyed 79 highly educated language learners and teachers in an intensive training setting in the US. The results revealed significant relationships between personality types and learning strategies. According to the findings, extroverts used affective and visualization strategies more than their introvert counterparts, who preferred searching for and communicating meaning strategies relatively more. In contrast to sensing-type participants, intuitive-type people had a significantly frequent use of a wide range of strategies including searching for and communicating meaning, formal model-building, and managing emotions. Feeling-type learners, when compared to their counterparts, the thinkers, displayed greater use of general study strategies. And finally, judging-type individuals reported using more general study strategies while perceivers were more interested in searching for and communicating meaning.

Rossi-Le (1989) investigated the relationship between perceptual learning styles and learning strategies among 147 adult immigrants studying English in community college settings. The participants completed the PLSPQ and an earlier version of the SILL. A significant relationship between sensory preferences and overall strategy use on the SILL was noticed. The results indicated that visual learners tended to use

visualization strategies and that auditory learners used memory strategies more frequently than did the other learners. Tactile learners showed a more significantly frequent use of strategies for searching for and communicating meaning and self-management strategies. Moreover, kinesthetic learners did not make use of general study or self-management strategies as frequently as others did.

Ehrman and Oxford (1990) explored the strategy use of a sample of adult learners in the US with reference to their personality types. They found out that extroverts preferred more social strategies. This was quite expected since extroverts are open about their thoughts and feelings and try to build social and interpersonal relationships more than their introvert counterparts. Moreover, sensing learners liked memory strategies while intuitive learners liked compensation strategies. Thinkers favored metacognitive strategies while feelers rejected them and liked social strategies. Finally, perceivers or open learners chose affective strategies, which judgers or closure-oriented learners rejected.

Oxford (1991 as cited in Oxford, 1995) conducted a study into the relationship between strategy use and sensory preferences. The results indicated that visual learners had a tendency to use strategies involving reading alone and in a quiet place or paying attention to blackboards, movies, computer screens, and other forms of visual stimulation. Auditory learners were found to be at ease without visual input and often manipulated strategies that encouraged conversation in a noisy environment with numerous sources of aural stimulation. Kinesthetic students were reported being in need of movement strategies, and tactile learners needed strategies that require the manipulation of real objects in the learning environment. However, both kinesthetic and tactile learners were found to need to take frequent breaks while reading or working on something.

Oxford and Ehrman (1995) conducted a research into the relationship between strategy use and a number of variables including personality types among a sample of learners in the US. The findings revealed that extroverts used social strategies more than their introvert counterparts. In addition, judging-type learners reported a significantly greater use of metacognitive strategies than sensing-type participants who showed a tendency to be orderly, organized, and closure-oriented.

More recently, Littlemore (2001) investigated the relationship between cognitive styles and communication strategies among 82 French-speaking Belgian university students specializing in English. The participants were asked to perform a concrete picture description task adapted from Poullisse (1990). The results showed that holistic learners used a significantly higher proportion of holistic conceptual strategies than analytic learners who chose more analytic strategies. Both groups used conceptual strategies significantly more than linguistic ones. Littlemore concluded that cognitive styles helped learners determine communication strategy preferences.

In another study, Carson and Longhini (2002) reported on the former's experience of learning Spanish during an eight-week stay in Argentina through the analysis of her diary entries and responses to the SAS and the SILL. The diary was focused on the use of learning strategies during the language learning period. The results showed that Carson's learning styles (*viz.*, visual, introvert, intuitive/random) often affected her use of strategies. The point was also reflected in her diary corpus.

And finally, M.-L. Chen (*in press*) employed the PLSPQ and SILL to explore the relationship between learning style preferences and learning strategies among 390 junior high school students in Taiwan. The findings indicated that those with a visual preference had a significantly greater use of memory, cognitive, metacognitive, affective, and social strategies. Auditory learners reported using cognitive,

metacognitive, and affective strategies the most. Moreover, significant links were detected between kinesthetic, tactile, and group learning style preferences and all six learning strategy categories on the SILL. Based on these results, M.-L. Chen concluded:

It is critical for classroom teachers to be more aware of the differences in their students.... If [they] help their students be more aware of their perceptual preferences, namely their strengths, and employ strategies that match with their strengths, [students] may become more effective language learners. (p. 4)

Chapter Three

Introduction

Literature Review



METHODOLOGY

Results & Discussion

Conclusion

In this chapter, the methodology of the study will be explicated. First, the design will be stated. Second, the participants involved in the study, their general characteristics, and the how and why of their selection will be explained. Next, detailed information concerning the instruments employed in the study together with related issues such as reliability and validity will be discussed. Finally, the procedures followed for data collection and analysis will be explored.

3.1. Design

The present study is designed as a correlational type of research. In correlational research, there is usually no manipulation of the variables, and the purpose is to investigate the extent to which the variables are related and the direction of the relationship. In the current study, the strength and direction of the relationship between the participants' self-report responses to learning style preferences and those to learning strategy categories are examined.

Correlational research is, therefore, different from ex post facto research in that it “relates two (or more) variable measures from *the same group of subjects*, whereas [the latter] compares two (or more) groups on the *same variable measure*” (Ary, Jacobs, Razavieh, & Sorenson, 2006, p. 377, emphasis is original). Another area of difference concerns the issue of causality; in other words, unlike ex post facto research, a correlational study does not seek to establish a cause and effect relationship between the variables.

3.2. Participants

The participants involved in this study were 138 graduate students at Shahid Beheshti University, Tehran, Iran. They included both first and second year students from among six diverse faculties. The participants were also asked to rate their English proficiency level as they perceived it. Moreover, the information regarding their age was elicited in the form of five different age categories. Table 3.1 on the next page presents the participants' distribution based on the background variables in the study.

Table 3.1. Participants' Distribution by Gender, Age, Faculty, Year of Study, and Self-rated English Proficiency Level (N = 138)

Faculty	<i>n</i>	%	Gender	<i>n</i>	%
Education & Psychology	29	21	Male	75	54
Law	22	16	Female	63	46
Architecture & Urban Planning	15	10			
Nuclear Engineering	27	20	Year of Study	<i>n</i>	%
Management & Accounting	27	20	First	88	64
Sciences	18	13	Second	50	36
Self-rated Proficiency Level	<i>n</i>	%	Age	<i>n</i>	%
Very Low	3	2	23 or below	34	25
Low	23	17	24-27	93	67
Intermediate	58	42	28-31	8	6
Relatively Good	35	25	32-35	1	1
Good	14	10	36 or above	2	1
Excellent	5	4			

The reason why graduate students were selected as the participants was the assumed higher level of their exposure to the English language in comparison to their undergraduate counterparts. Needless to say, an adequate knowledge of the English language is essential for those graduate students who intend to pursue their academic career. This motive makes them suitable candidates for inclusion in such a study that needs participants who should, at least, demonstrate an ongoing and continued commitment to learning the English language.

The sampling procedure employed for the selection of the participants was two-stage random sampling (Wallen & Fraenkel, 2001). At first, six faculties were randomly drawn from among all the faculties at the university (i.e., each faculty was treated as a cluster). At the second stage, from among each of the very six faculties, one or more departments, depending on the faculty, were randomly selected. All the active students of the given departments were regarded as the sample in the current study (see also Appendix A). Active students were those who took courses and,

accordingly, attended the classes on a regular basis at the time of data collection. Those students who were working on their theses and did not take any other courses were not considered active.

It is worth mentioning that for answering the second, fourth, and seventh research questions, changes were made to two of the variables in the study. Firstly, in order to come to a reasonable number of cases in each discipline-related subsample, those cases from the three faculties of Education and Psychology, Law, and Management and Accounting versus the three faculties of Architecture and Urban Planning, Nuclear Engineering, and Sciences were combined to form students coming from *social sciences* ($n = 78, 57\%$) versus *technical fields* ($n = 60, 43\%$), respectively (Oxford & Nyikos, 1989).

Secondly, in order to come to a clearer picture of English proficiency level, the students at the middle point who rated their proficiency level as *intermediate* were excluded from the analysis. Moreover, to have a reasonable number of cases in each subsample, the values of *Very low* and *Low* versus *Relatively Good*, *Good*, and *Excellent* were combined to represent *low* proficiency group ($n = 26, 33\%$) versus *high* proficiency group ($n = 54, 67\%$), respectively (Sheorey, 1999).

3.3. Instruments

In this study, two self-report questionnaires were employed to collect quantitative data. The PLSPQ was used to identify the major, minor, and negligible learning style preferences of the students. On the other hand, the LSUS was used to identify the pattern of learning strategies (both skill- and function-based strategies) deployed by the participants.

3.3.1. *Perceptual Learning Style Preference Questionnaire (PLSPQ)*

Developed by Reid (1984), the PLSPQ measures the students' preferred learning styles (see Appendix B). This is one of the first learning style measures widely known in the ESL/EFL field. It consists of 30 randomly ordered statements for six learning style preferences (five statements on each learning style):

- *Visual* (e.g., "I learn better by reading than by listening to someone")
- *Auditory* (e.g., "I learn better in class when the teacher gives a lecture")
- *Kinesthetic* (e.g., "I prefer to learn by doing something in class")
- *Tactile* (e.g., "I learn more when I make something for a class project")
- *Individual* (e.g., "When I study alone, I remember things better")
- *Group* (e.g., "I learn more when I study with a group")

The questionnaire is based on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). As reported by Reid (1987), the PLSPQ was normalized on non-native speakers, and the "validation of the questionnaire was done by the split-half method. Correlation analysis of an original set of 60 statements (ten per learning style) determined which five statements should remain within each subset" (p. 92). Later, in order to "[wash] the dirty laundry of [her] learning styles research," Reid (1990, p. 336) offered a more detailed account of the procedures adopted for constructing and validating the questionnaire. Reid (1995) also classified styles as either *major*, *minor*, or *negligible* (or *negative*). Major is a preferred learning style, minor is one in which learners can still function, and negligible means they may have difficulty learning in that way. She set cut off points for each of these categories in the scoring sheet of the questionnaire: major, 13.5 and above; minor, 11.5 to 13.49; and negligible, 11.49 or less.

An available Persian version of the PLSPQ, translated by Modabberi (2001), was taken as a base. For the purpose of the current study, the wording of most items underwent necessary modifications by the researcher. An expert in language

education, then, checked the items to ensure their clarity. The researcher decided that one expert sufficed because the translated version had already been employed and checked by some experts in the earlier study (i.e., Modabberi, 2001).

The translated version of the questionnaire was pretested with a convenience sample consisting of 40 graduate students (23 males, 17 females) at Shahid Beheshti University, Tehran, Iran (see Appendix C for the translated version of the PLSPQ). The respondents were asked to mark unclear statements, phrases, or words. Based on the students' responses to the items, the Cronbach's alpha for the whole questionnaire was .71. However, as J. D. Brown (2001) pointed out, for questionnaires involving orthogonal subscales (i.e., questionnaires whose subscales are mutually exclusive), the reliability of each subscale is far more important than that of all items on the questionnaire. Further analysis revealed that the Cronbach's alpha values for the visual, auditory, kinesthetic, tactile, individual, and group subscales were .68, .73, .78, .70, .89, and .85, respectively (see also Appendix D). According to Nunnally and Bernstein (1994), alpha values reaching .70 could be considered acceptable. As it can be noted, except for the visual subscale, which fell just short of .70, all other subscales met the criterion.

In addition, a close examination of the participants' comments led to the revision of four items (i.e., items 7, 8, 16, and 22). In item 7, "When someone tells me how to do something in class, I learn it better," the word 'someone' was ambiguous for most respondents, so it was replaced by 'teacher.' Likewise, the phrase 'do things' in item 8, "When I do things in class, I learn better," was rephrased to "When I engage in practical activities, I learn better." Next, in item 16, "I learn better when I make drawings as I study," the phrase 'like tables and diagrams' was parenthetically added immediately after the word 'drawings' for further clarification. Finally, as for item 22,

“When I build something, I remember what I have learned better,” the concept of ‘to build something’ evoked diverse interpretations by students from different majors. Therefore, the ambiguous item was reworded to “When I practically apply the instructional material, I remember what I have learned better.”

A common comment voiced by respondents concerned the repetition of the statements. In the same vein, Reid (1990) reported a respondent’s interesting written complaint during the piloting stage of the questionnaire that “this this this this this questionnaire questionnaire questionnaire questionnaire questionnaire is is is is is repetitive repetitive repetitive repetitive repetitive” (p. 330). This repetitive aspect is, however, inevitable since it is embedded in the questionnaire in order both to ensure the consistency of the responses and to tap multiple facets of the given construct.

3.3.2. Language Strategy Use Survey (LSUS)

Developed by Cohen, Oxford, and Chi (2002), the LSUS measures skill-based strategies (see Appendix E). It consists of 90 items covering strategies used in six different areas:

- *Listening* (26 items, e.g., “I use the speaker’s tone of voice as a clue to meaning”)
- *Vocabulary* (18 items, e.g., “I sometimes use rhyming to remember new words”)
- *Speaking* (19 items, e.g., “I tend to plan out in advance what I want to say”)
- *Reading* (11 items, e.g., “I make it a point to read extensively in the target language”)
- *Writing* (10 items, e.g., “I frequently take class notes in the new language”)
- *Translation* (6 items, e.g., “I make every effort to put my native language out of my mind and think only in the target language”)

The questionnaire is based on a three-point Likert scale, ranging from 1 (*I use this strategy and find it useful*) to 3 (*I have never tried this strategy*). In a study conducted by Paige, Cohen, and Shively (2004, p. 264), the LSUS underwent an exploratory factor analysis with a sample of 300 students “producing a five-factor model that was a

reasonable approximation of the original conceptual structure, and confirmatory factor analysis demonstrated that the model represented a fair, if not robust, fit with the data.” The proposed factors included *Learning Structure and Vocabulary*, *Speaking*, *Listening*, *Reading*, and *Asking for Clarification*. In order, their reliability coefficients were .85, .77, .83, .67, and .79.

It is worth pointing out that the questionnaire was originally constructed as a practical classroom tool, rather than a research instrument, to raise students’ awareness of the strategies they use. There was, accordingly, “no attempt to have cumulative rating scales and the inventory [was] intended to serve as a checklist and index” (Dörnyei, 2005, p. 184). However, as Paige et al. (2004) asserted, the LSUS is a reliable and valid measure and “can be used fruitfully in future research studies” (p. 271). In order to narrow this gap, the researcher decided to use the LSUS with the rating scale on Oxford’s (1990) SILL, a well-known strategy assessment instrument. Oxford developed scale ranges based on mean scores for determining the degree of strategy use. Those obtaining a mean score within the range of 3.5-5.0 are considered *high*, 2.5-3.4 *medium*, and 1.0-2.4 *low* strategy users.

Before translating the questionnaire, the researcher closely inspected the original items and made some modifications. Firstly, for the reason stated above, the existing three-point scale was replaced with a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This change necessitated the modification of some items to suit the new scale. Secondly, slight changes were made to some statements to keep them simple and short. For example, all the instances of ‘the target language’ and ‘the native language’ were substituted with ‘English’ and ‘Persian,’ respectively. Thirdly, most of the subheadings were omitted in order not to confuse the respondents and also so as to shorten the length of the questionnaire. However, those subheadings

essential to understanding the items were either embedded within the respective statements or retained in their original form. And finally, one item was excluded and another was curtailed. Item 3, “If I am in a restaurant or store where the staff speak the target language, I usually ask questions in it so I can practice listening to native-speaker talk,” was deleted because it is representative of an ESL context and is less likely to be applicable in an EFL context (i.e., the context of the current study). Moreover, item 60, “When I can’t think of a word or expression, I use words from my native language, but I add vowels or consonants so that they seem like words in the target language,” was shortened to “When I can’t think of a word or expression, I use equivalent words from Persian” because of the difference between Persian and English orthography (see Appendix F for the modified version of the LSUS).

The modified version of the questionnaire was translated into Persian by the researcher. For some of the items that were the same as those in Oxford’s (1990) SILL, the available Persian version, translated by Tajeddin (2001), was adopted. The end result was, then, checked for clarity, relevance, and content adequacy by three experts in language education. Accordingly, some items underwent modifications.

In order to further identify the problematic areas, the translated version was delivered to a convenience sample of 44 graduate students (25 males, 19 females) at Shahid Beheshti University, Tehran, Iran (see Appendix G for the translated version). The respondents were asked to mark any unclear word, phrase, or statement. After the analysis of the responses and taking account of the respondents’ comments, the researcher made changes to some items. What follows is the description of these changes classified by the questionnaire subscales (see also Appendix H). It should be noted that item numbers mentioned below are related to the items on the modified version of the questionnaire rather than those on the original version.

Listening subscale. In this subscale, five items underwent revision (i.e., items 2, 4, 5, 12, and 17). The respondents voiced concern about item 2, “I try to watch movies and TV programs and to listen to the radio in English,” that “*they always watch English movies but seldom listen to the radio in English.*” This double-barreled item was, thus, divided into two items. In item 4, “I practice all the sounds in English until I am comfortable with them,” and item 5, “I look for associations between the sound of a word or phrase in English with the sound of a familiar word,” the word ‘sound’ was unclear for the majority of the respondents, and it was replaced with ‘pronunciation,’ which seemed more tangible. In a similar vein, the word ‘stress’ in item 12, “When I listen in English, I listen for word and sentence stress,” led to ambiguities. Therefore, a simple and concise definition of the given word was parenthetically provided immediately after the statement. Finally, to reduce the vagueness of the word ‘context’ in item 17, “When I listen in English, I pay attention to the context of what is being said,” an explanatory note was added in parentheses: ‘in terms of topic, place, time, the relationship between the listener and the speaker, and’ The calculated Cronbach’s alpha for this subscale was as high as .88.

Vocabulary subscale. Only one item seemed problematic in this subscale. The Persian translation of the word ‘structure’ in item 36, “To memorize the new word, I pay attention to the structure of it,” was not clear for most respondents. To clarify the point, the phrase ‘such as the root, the prefix, or the suffix’ was parenthetically added immediately after the word ‘structure.’ The calculated Cronbach’s alpha was .87.

Reading subscale. In this subscale, no change was made. The Cronbach’s alpha for the subscale was .74.

Speaking subscale. Based on the respondents’ comments, one item in this subscale was deleted. Item 72, “When I can’t think of a word or expression, I make up

new words,” raised questions such as “*how could I make up a new word?*” on the part of the respondents. Ideally, the item should have been excluded prior to pretesting the instrument. Further statistical analysis of the item also lent support to this decision; that is, the item had a negative correlation with the total subscale. Moreover, the deletion of the item raised the Cronbach’s alpha for the speaking subscale to .78. The alpha would be .76 if the item were included.

Writing subscale. “*I don’t think I do such a thing any more,*” wrote one of the respondents about item 74, “I practice writing the alphabet of English.” Clearly, the English level of most respondents obviated the need for practicing the English alphabet, which is a common practice at elementary levels. Further analysis also revealed that the exclusion of the item would raise the Cronbach’s alpha to .74. If the item were retained the alpha would be only .70.

Translation subscale. The Cronbach’s alpha for this subscale was as low as .41. This was expected because most of the strategies in this subscale are not deployed with the learners’ full awareness (e.g., items 85, “I translate when reading in order to keep my train of thought and basically make the text more comprehensible to me,” and item 86, “While I am listening, I translate parts of what they have said into Persian to help store the concepts in my mind”). This is also inconsistent with the majority of strategy definitions that include an element of consciousness (see section 2.3.2). However, the researcher decided to retain the items in this subscale and added the phrase ‘in my mind’ to them to underscore their mental dimension, which stands in contrast to most of other conscious strategies.

Taking Nunnally and Bernstein’s (1994) criterion of acceptable alpha (i.e., .70) into account, all subscales, with the exception of translation subscale, showed that they were internally consistent and reliable. Moreover, the Cronbach’s alpha for the

whole questionnaire reached a high index of .94. Consequently, the final Persian version of the questionnaire was prepared for the study proper. On the whole, this version consisted of 88 items on six strategy categories (listening, 26 items; vocabulary learning, 18 items; reading, 11 items; speaking, 18 items; writing, 9 items; and translation, 6 items).

It is worth pointing out that, in order to answer the sixth, seventh, and eighth research questions, the questionnaire items were reclassified according to Oxford's (1990) taxonomy to form function-based strategies. However, as there was no affective strategy item on the questionnaire, the reclassified version included five strategy categories of memory, cognitive, compensation, metacognitive, and social (see Appendix I).

3.3.3. Reliability of the instruments in the main study

The participants' responses to both questionnaires in the main study were subjected to analysis to check whether and to what extent the questionnaires generated reliable results and also to determine to what extent the interpretations derived from the data are warranted. On the whole, the analyses revealed that the results of the visual and auditory subscales on the PLSPQ together with those of the translation subscale on the LSUS were open to question and should be treated with caution. What follows is a detailed account of the results.

Perceptual Learning Style Preference Questionnaire

As seen earlier, the results of pretesting the PLSPQ indicated that all subscales in the questionnaire had acceptable Cronbach's alpha values, and the items were all internally reliable. However, the analysis of responses in the main study revealed that

the values for four out of the six subscales fell short of Nunnally and Bernstein's (1994) criterion of acceptable alpha (i.e., .70).

The calculated Cronbach's alpha values for the visual, auditory, kinesthetic, tactile, individual, and group subscales were .50, .62, .64, .67, .82, and .79, respectively. Reid (1990) attributed the low alpha indexes for the subscales to the small number of the items and the function they serve. However, the extremely low index for the visual subscale (i.e., .50) cannot be justified by any standard.

It seems wise to compare the related Cronbach's alpha values in other studies to see where the problem lies. Table 3.2 illustrates the alpha indexes in some studies together with those obtained in the current study.

Table 3.2. Comparison of the Cronbach's Alpha Values in Different Studies

Study	N	Style Preference					
		Visual	Auditory	Kinesthetic	Tactile	Individual	Group
Itzen (1995)	126	.54	.56	.63	.72	.80	.87
Yamashita (1995)	582	.51	.48	.68	.72	.81	.82
Liversidge (1996)	237	.36	.35	.75	.67	.75	.80
Wintergerst et al. (2001)	100	.37	.39	.69	.59	.75	.87
Isemonger & Sheppard (2007)	691	.37	.39	.76	.67	.84	.83
The current study	138	.50	.62	.64	.67	.82	.79

Note. Adapted from Isemonger & Sheppard (2007).

A quick glance at the values reveals a trend: In most of the studies, the alpha values for the visual and auditory subscales did not even reach .60. However, other four scales showed acceptable alpha values. This is in line with concerns about the reliability of the PLSPQ as a measure of learning styles (see section 2.2.5 for relevant discussions).

However, as it is evident, although the visual and auditory constructs on the PLSPQ might not generate valid scores, the underlying assumptions of the other four

constructs (i.e., kinesthetic, tactile, individual, and group) were reasonably supported. In order to prove this, the researcher reclassified the questionnaire items according to the subscales proposed by Isemonger and Sheppard (2007) and also the one by Wintergerst et al. (2001). The results showed that the proposed models produced a very good fit with the data; that is, the suggested subscales—including the items from the kinesthetic, tactile, individual, and group subscales on the PLSPQ—indicated acceptable indexes of Cronbach's alpha. Therefore, for the case of the present study and other studies employing the PLSPQ, it is advisable that the results obtained from the two subscales of visual and auditory learning be interpreted with extreme caution unless there are other sources of data collection in the study by which these results could be corroborated.

Language Strategy Use Survey

Based on the analysis of the participants' responses to the LSUS in the main study, the Cronbach's alpha values for listening, vocabulary, reading, speaking, writing, and translation subscales were .87, .85, .75, .83, .65, and .49, respectively. In addition, the alpha value for the whole questionnaire was as high as .94. Unfortunately, except for the alpha values calculated during the pretesting stage of the questionnaire (see section 3.3.2), no other studies using this questionnaire were found to compare the reliability indexes.

The comparison of the Cronbach's alpha indexes for stages of the pretesting and the main study showed that the values were rather similar, and those for the whole questionnaire were even identical (i.e., .94). The only point of concern was, however, the translation subscale whose alpha values (i.e., .41 in the pretesting and .49 in the main study) were remarkably low. As it was mentioned earlier, this is, in part, due to the nature of the items in this subscale. Put another way, employing most of the

translation strategies involves a mental and subconscious element, and it comes as no surprise that the participants had difficulty self-reporting on these strategies (this point was also raised in participants' comments). As a consequence, using self-report questionnaires for eliciting translation strategies seems inadequate, and other methods such as think-aloud protocols should be deployed so as to probe deeper into the participants' mental thoughts.

Taking account of this special nature of translation strategies and based on the statistical information, it was found out that three items had negative correlations with other items in the translation subscale. These items were item 86, "I try to put my Persian out of my mind and think only in English," item 87, "I try to understand what I have heard or read without translating it word-for-word into Persian," and item 88, "I am cautious about transferring words or concepts directly from Persian to English." It was revealed that the exclusion of these items would produce a spuriously high mean score for the translation subscale. Accordingly, they were included in calculating the mean score of the translation subscale. The results of this subscale should, thus, be interpreted with caution.

Furthermore, the results of reliability analysis on the new function-based strategy categories revealed that the resulting subscales were also internally reliable. Put statistically, the Cronbach's alpha indexes for memory, cognitive, compensation, metacognitive, and social strategy categories were found to be .77, .88, .80, .73, and .64, respectively. This indicated that the reclassified items correlated well with each other, and the new strategy categorization also appeared to be reliable. However, the last lower value may be related to the small number of items in the social subscale.

3.4. Questionnaire Layout

In designing the questionnaire¹ layout, several steps were taken to increase both the return rate and the credibility of the participants' responses because "producing an attractive and professional design is half the battle in eliciting reliable and valid data" (Dörnyei, 2003, p. 19). Firstly, there was an effort to make the layout of the questionnaire as attractive as possible. Following Dörnyei's (2003) advice, the questionnaire was prepared in booklet format using color paper. Secondly, the box containing the biodata information was placed at the end of the questionnaire items (Dörnyei, 2003), and the related information was also kept to a minimum so that the respondents could easily tick the appropriate box. Finally, the respondents were presented with a choice to receive the information regarding the whole project as well as their own strategies and style preferences (J. D. Brown, 2001). There was a highlighted note mentioning this point at the beginning of the questionnaire and also a place at the end for providing their email addresses if they wanted to receive feedback on the results. About 62% of all respondents wrote their email addresses and this was, in a way, indicative of the point that they had responded with some degree of care and attention (see Appendix J for the final format of the questionnaire as used in the study).

3.5. Data Collection Procedures

Data collection in the current study started on Saturday, May 18, 2008. About a week earlier, the researcher had gone to the specified faculties and obtained the required information on the schedule of the courses. About 240 copies of the questionnaire were distributed (exactly twice more than the required sample size). The researcher himself attended the classes, submitted the questionnaire, and asked the

¹ The word "questionnaire" here covers both the PLSPQ and the LSUS.

students to return them the next session they came to the class. The students were also requested to respond with care and honesty. Moreover, the researcher ensured the participants that the elicited data would remain confidential. Although the questionnaire's return rate was high during the first days of data collection, the process was not complete until about one month after the starting date. Finally, 148 questionnaires were received. Having examined them, the researcher found that ten questionnaires either were incomplete or contained inconsistent data, so they were excluded. As a consequence, 138 questionnaires comprised the final dataset of the study and were subjected to analysis.

Taking into account the length of the questionnaire along with the fact that the data were collected during the last weeks of the semester when most of the students were busy getting ready for the final examinations, the return rate of 58% was a bit beyond the researcher's expectations and could be regarded as acceptable. This was, in part, attributable to the design and layout of the questionnaire.

3.6. Data Analysis

Having calculated the descriptive statistics on the two questionnaires (e.g., means, standard deviations, and frequency counts), the researcher checked the dataset for instances of outliers. Furthermore, he made sure that the assumptions underlying the statistical tests used in the study were met.

For answering the first, third, and sixth research questions, one-way repeated measures analysis of variances (ANOVAs) were applied. Moreover, for these three research questions, comparison-based Bonferroni post hoc tests were calculated to determine the areas of significant difference.

For answering the second, fourth, and seventh research questions, independent samples t tests were run to see whether learning style preferences and learning strategy categories are affected by background variables. And finally, for the eighth research question, the Pearson Product-Moment Correlation (r) was applied to determine the strength of the relationship between the students' preferred learning styles and strategy categories. All the statistical analyses were completed using *Statistical Package for the Social Sciences* (SPSS) version 15.0.

Chapter Four

Introduction

Literature Review

Methodology

▶ **RESULTS & DISCUSSION**

Conclusion

In this chapter, there are two main parts. The first includes the statistical information based on the analyses of the participants' responses to the *Perceptual Learning Styles Preference Questionnaire* and the *Language Strategy Use Survey*. Then, the relationship between the mean scores of learning style preferences and those of the language learning strategy categories will be reported. In the second part, the results will be discussed in light of the related literature.

4.1. Results

In this section, the results obtained from the participants' responses to the questionnaires will be outlined.

4.1.1. Learning styles

The results of the analyses conducted on the data obtained from the PLSPQ are as follows:

Research Question 1: *What is the participants' pattern of learning style preferences?*

When the participants' responses were analyzed, based on the cut off points stated in Reid (1995), it was found out that the mean scores of the learning style preferences of kinesthetic ($M = 14.49$), tactile ($M = 14.36$), and auditory ($M = 13.71$) fell into the major category (see Table 4.1). This means that the participants strongly preferred active involvement in language learning and also favored auditory-oriented materials as a source of input.

Table 4.1. Descriptive Statistics of Learning Style Preferences (N = 138)

Style Preference	Mean	Std. Deviation	Minimum	Maximum	Type
Visual	13.04	2.38	7	18	Minor
Auditory	13.71	2.44	8	19	Major
Kinesthetic	14.49	2.49	9	20	Major
Tactile	14.36	2.58	9	20	Major
Individual	12.17	4.00	4	20	Minor
Group	10.99	4.03	1	20	Negligible

Note. 11.49 or less = Negligible; 11.5 to 13.49 = Minor; 13.5 and above = Major.

Moreover, the students' visual ($M = 13.04$) and individual ($M = 12.17$) learning style preferences were minor; in other words, students could still function within these preferences. And finally, group learning ($M = 10.99$) fell into negative or negligible

category, meaning that the students found it difficult or undesirable to engage in activities requiring group work.

In order to assess significant differences between learning style preferences, a one-way repeated measures ANOVA was run. The results revealed that there were significant differences among the six learning style variables, Wilks' Lambda = .45, $F(5, 685) = 32.66, p < .001$. The effect size was moderate ($\eta^2 = .55$). Bonferroni post hoc test showed that the participants significantly preferred tactile and kinesthetic learning styles to visual, individual, and group learning styles (see Table 4.2).

Table 4.2. Bonferroni Post Hoc Test for Differences in Learning Style Preferences

Source	Difference	<i>p</i>	Difference	<i>p</i>	Difference	<i>p</i>	Difference	<i>p</i>
Visual (V)	K > V	.00**	T > V	.00**				
Auditory (A)	K > A	.05*						
Kinesthetic (K)								
Tactile (T)								
Individual (I)	K > I	.00**	T > I	.00**	A > I	.01**		
Group (G)	K > G	.00**	T > G	.00**	A > G	.00**	V > G	.00**

* $p < .05$. ** $p < .01$.

As shown in the table, the participants also preferred kinesthetic learning style to auditory one. On the other hand, they favored auditory learning style to individual and group learning styles. Finally, they showed the least preference for group learning.

Research Question 2: *What is the relationship between the participants' learning style preferences and their gender, age, discipline, and self-rated English proficiency level?*

For answering this question, a series of independent samples *t* tests were run for finding any significant difference by gender, age, discipline, and self-rated proficiency level. In each analysis, one of the aforementioned factors was regarded as the independent variable and the participants' mean scores of the learning style categories were treated as dependent variables. The significance level was set at $p < .05$.

Gender

Two significant differences were noticed. First, it was found that males in the sample significantly preferred individual learning style compared to the females, $t(136) = 2.87, p < .01$. The effect size of the difference was small (see Table 4.3).

Table 4.3. Independent Samples T Tests for Learning Style Preferences for Gender Differences (N = 138)

Style Preference	Male ($n = 75$)		Female ($n = 63$)		$t(136)$	p	Effect Size ^a
	M	SD	M	SD			
Visual	13.16	2.37	12.90	2.41	0.63	.53	0.00
Auditory	13.69	2.55	13.73	2.32	-0.09	.93	0.00
Kinesthetic	14.28	2.42	14.78	2.57	-1.10	.28	0.01
Tactile	14.27	2.44	14.48	2.75	-0.47	.64	0.00
Individual	13.04	3.81	11.13	4.01	2.87**	.01	0.06
Group	10.37	3.72	11.73	4.29	-1.99*	.05	0.03

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. ^a Eta squared.

In contrast, females favored group learning style more than their male counterparts, indicating their stronger preference for involving in group activities and social interaction, $t(136) = -1.99, p < .05$, but the magnitude of the effect size was rather small.

Age

Only one learning style category appeared to be favored differently by students in different age groups (see Table 4.4 on the next page). Younger students reported being significantly more auditory-oriented than their older counterparts (i.e., aged 24 or over), $t(136) = 2.46, p < .01$. The magnitude of the effect size was proved to be small.

Table 4.4. Independent Samples T Tests for Learning Style Preferences for Age Differences (N = 138)

Style Preference	23 or below (<i>n</i> = 34)		24 or over (<i>n</i> = 104)		<i>t</i> (136)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Visual	12.74	2.18	13.14	2.45	-0.87	.39	0.01
Auditory	14.59	2.22	13.42	2.45	2.46*	.02	0.04
Kinesthetic	14.65	2.46	14.44	2.51	0.42	.70	0.00
Tactile	14.06	2.50	14.46	2.61	-0.79	.43	0.00
Individual	12.06	3.85	12.20	4.07	-0.18	.86	0.00
Group	10.79	4.13	11.06	4.02	-0.33	.74	0.00

* *p* < .05, two-tailed. ^a Eta squared.

Discipline

In terms of discipline, two significant differences were found in the participants' learning style preferences. As revealed in Table 4.5, participants majoring in technical fields showed stronger tactile and touch-oriented tendencies, $t(136) = -2.11$, $p < .05$. In addition, students in social sciences were more individual-oriented compared to those in technical fields, $t(136) = 2.13$, $p < .05$. The effect sizes were small in both cases.

Table 4.5. Independent Samples T Tests for Learning Style Preferences for Discipline Differences (N = 138)

Style Preference	Social Sciences (<i>n</i> = 78)		Technical Fields (<i>n</i> = 60)		<i>t</i> (136)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Visual	12.72	2.38	13.47	2.33	-1.85	.07	0.02
Auditory	13.78	2.46	13.62	2.43	0.40	.70	0.00
Kinesthetic	14.23	2.51	14.83	2.44	-1.41	.16	0.01
Tactile	13.96	2.55	14.88	2.54	-2.11	.04*	0.03
Individual	12.79	4.25	11.35	3.52	2.13	.04*	0.03
Group	10.54	4.42	11.58	3.40	-1.57	.12	0.02

* *p* < .05, two-tailed. ^a Eta squared.

Self-rated English proficiency level

Concerning self-rated proficiency level, no significant difference was found in learning style preferences. This indicates that the participants' perception of their English proficiency level did not appear to have any effect on their learning style preferences (Table 4.6).

Table 4.6. Independent Samples T Tests for Learning Style Preferences for Self-rated Proficiency Level Differences (N = 80)

Style Preference	Low (<i>n</i> = 26)		High (<i>n</i> = 54)		<i>t</i> (78)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Visual	12.77	2.27	13.36	2.49	-1.04	.30	0.01
Auditory	14.04	2.34	13.65	2.73	0.63	.53	0.00
Kinesthetic	14.12	2.37	14.80	2.63	-1.12	.27	0.02
Tactile	14.38	2.47	14.26	2.88	0.19	.85	0.00
Individual	12.15	3.92	12.59	4.08	-0.46	.65	0.00
Group	10.19	3.75	10.69	4.34	-0.50	.62	0.00

^a Eta squared.

4.1.2. Learning strategies

The results of the analyses conducted on the data obtained from the LSUS are as follows:

Research Question 3: What is the participants' pattern of skill-based strategies?

Based on Oxford's (1990) cut off points in the frequency of strategy use, the analysis of the students' responses indicated that the mean scores of all strategy categories, including overall, fell into the medium level of use (see Table 4.7 on the next page). This means that the sample tended to use strategies moderately.

Table 4.7. Descriptive Statistics of Overall and Skill-based Strategy Categories (N = 138)

Strategy Category	Mean	Std. Deviation	Minimum	Maximum	Rank	Type
Listening	3.28	0.42	2.23	4.38	2	Medium
Vocabulary	3.14	0.49	1.94	4.22	6	Medium
Reading	3.44	0.42	2.45	4.45	1	Medium
Speaking	3.16	0.45	1.94	4.28	5	Medium
Writing	3.27	0.43	2.22	4.22	3	Medium
Translation	3.25	0.53	1.67	4.33	4	Medium
Overall	3.23	0.37	2.17	4.01	–	Medium

Note. 2.4 or less = Low; 2.5 to 3.4 = Medium; 3.5 and above = High.

As viewed in the table, the most preferred strategy category was reading ($M = 3.44$). The next three categories had very close mean scores: listening ($M = 3.28$), writing ($M = 3.27$), and translation ($M = 3.25$). Speaking strategy category ($M = 3.16$) ranked the fifth, and finally, the least preferred strategies were those related to vocabulary learning ($M = 3.14$).

A one-way repeated measures ANOVA was conducted to assess the significant differences between the strategy categories. The results of ANOVA showed that the participants used the six learning strategy categories differently, Wilks' Lambda = .62, $F(5, 685) = 16.28$, $p < .001$. The effect size of the difference was small ($\eta^2 = .38$). The following Bonferroni post hoc test indicated that the participants used reading strategies significantly more often than all other strategies (see Table 4.8).

Table 4.8. Bonferroni Post Hoc Test for Differences in Skill-based Strategy Categories

Source	Difference	p	Difference	p	Difference	p
Listening (L)	R > L	.00**				
Vocabulary (V)	R > V	.00**	L > V	.01**	W > V	.02*
Reading (R)						
Speaking (S)	R > S	.00**	L > S	.03*	W > S	.03*
Writing (W)	R > W	.00**				
Translation (T)	R > T	.00**				

* $p < .05$. ** $p < .01$.

Furthermore, as evident in the table, it was shown that they significantly employed listening and writing strategies more frequently than speaking and vocabulary strategies.

Research Question 4: *What is the relationship between the participants' skill-based strategies and their gender, age, discipline, and self-rated English proficiency level?*

For answering this question, a series of independent samples *t* tests were run for finding any significant difference by gender, age, discipline, and self-rated proficiency level. In each analysis, one of the aforementioned factors was regarded as the independent variable and the participants' mean scores of the skill-based strategy categories, including overall, were treated as dependent variables. The significance level was set at $p < .05$.

Gender

The results showed that there was no statistically significant difference in the strategy use in terms of gender because all the significant values obtained were far above the significant value $p < .05$ (see Table 4.9).

Table 4.9. Independent Samples T Tests for Overall and Skill-based Strategy Categories for Gender Differences (N = 138)

Strategy Category	Male (<i>n</i> = 75)		Female (<i>n</i> = 63)		<i>t</i> (136)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Listening	3.29	0.43	3.26	0.42	0.47	.64	0.00
Vocabulary	3.15	0.52	3.12	0.46	0.41	.68	0.00
Reading	3.45	0.45	3.44	0.38	0.22	.83	0.00
Speaking	3.17	0.46	3.17	0.43	0.05	.96	0.00
Writing	3.25	0.44	3.31	0.43	-0.78	.44	0.00
Translation	3.30	0.61	3.19	0.43	1.23	.22	0.01
Overall	3.23	0.41	3.23	0.33	0.01	.99	0.00

^a Eta squared.

Age

With respect to age, only one significant difference was found (see Table 4.10). Younger learners appeared to use vocabulary learning strategies significantly more than their older counterparts, $t(136) = -2.38, p < .05$. The effect size was small.

Table 4.10. Independent Samples T Tests for Overall and Skill-based Strategy Categories for Age Differences (N = 138)

Strategy Category	23 or below ($n = 34$)		24 or over ($n = 104$)		$t(136)$	p	Effect Size ^a
	M	SD	M	SD			
Listening	3.19	0.46	3.30	0.41	-1.33	.19	0.01
Vocabulary	2.96	0.50	3.19	0.48	-2.38*	.02	0.04
Reading	3.38	0.43	3.46	0.41	-0.97	.33	0.01
Speaking	3.16	0.43	3.16	0.45	-0.05	.96	0.00
Writing	3.21	0.43	3.29	0.44	-0.95	.35	0.01
Translation	3.29	0.53	3.24	0.54	0.54	.59	0.00
Overall	3.16	0.39	3.25	0.37	-1.16	.25	0.01

* $p < .05$, two-tailed. ^a Eta squared.

Discipline

No significant differences by discipline were found in the participants' reported skill-based and overall strategy use (see Table 4.11).

Table 4.11. Independent Samples T Tests for Overall and Skill-based Strategy Categories for Discipline Differences (N = 138)

Strategy Category	Social Sciences ($n = 78$)		Technical Fields ($n = 60$)		$t(136)$	p	Effect Size ^a
	M	SD	M	SD			
Listening	3.25	0.43	3.32	0.42	-0.94	.35	0.01
Vocabulary	3.16	0.51	3.11	0.47	0.55	.59	0.00
Reading	3.47	0.44	3.41	0.40	0.75	.45	0.00
Speaking	3.18	0.47	3.14	0.42	0.56	.57	0.00
Writing	3.27	0.45	3.28	0.42	-0.05	.96	0.00
Translation	3.26	0.62	3.21	0.41	0.36	.72	0.00
Overall	3.23	0.39	3.22	0.35	0.12	.90	0.00

^a Eta squared.

It could be, therefore, stated that the students from different disciplines did not appear to employ strategies differently.

Self-rated English proficiency level

As Table 4.12 reveals, the mean scores on five out of six strategy categories as well as that of overall strategy use were significantly different in terms of self-rated proficiency level. In other words, those participants who perceived their proficiency level as high reported using significantly more strategies from different strategy categories including listening, $t(78) = -2.71, p < .01$, vocabulary, $t(78) = -3.41, p < .001$, reading, $t(78) = -2.91, p < .01$, writing, $t(78) = -5.49, p < .001$, translation, $t(78) = -2.04, p < .05$, and overall, $t(78) = -4.73, p < .001$. The magnitude of the effect sizes ranged from small to moderate.

Table 4.12. Independent Samples T Tests for Overall and Skill-based Strategy Categories for Self-rated Proficiency Level Differences (N = 80)

Strategy Category	Low ($n = 26$)		High ($n = 54$)		$t(78)$	p	Effect Size ^a
	M	SD	M	SD			
Listening	3.14	0.38	3.40	0.40	-2.71**	.01	0.09
Vocabulary	2.83	0.45	3.24	0.51	-3.41***	.00	0.13
Reading	3.22	0.45	3.51	0.41	-2.91**	.01	0.10
Speaking	3.02	0.40	3.23	0.44	-1.98	.05	0.05
Writing	3.00	0.37	3.45	0.34	-5.49***	.00	0.28
Translation	3.02	0.64	3.31	0.56	-2.04*	.05	0.05
Overall	2.96	0.39	3.35	0.32	-4.73***	.00	0.22

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed. ^a Eta squared.

As for the category of speaking strategies, although more proficient learners reported using more speaking strategies, the difference fell short of the significance level.

Research Question 5: What are the participants' five most and least frequently used strategies?

Based on their mean scores, the five most followed by the five least frequently used strategies are presented in Table 4.13. As viewed, the mean scores of all top strategies fell into the high level (i.e., $M = 3.5$ and above).

Table 4.13. The Five Most and Least Frequently Used Strategies

Strategy Items (ranked in descending order of mean score)	<i>M</i>	<i>SD</i>
55. Using dictionary to find the meaning of unfamiliar words (R, Cog)	3.96	1.06
79. Using dictionary to find or verify the meaning or spelling of words (W, Cog)	3.88	0.88
51. Paying attention to the text organization (headings & subheadings) (R, Cog)	3.79	0.80
25. Using prior knowledge if I don't understand what someone says (L, Com)	3.75	0.76
12. Paying attention to keywords (while listening) (L, Met)	3.72	0.75
↓		↓
60. Trying to start conversations in English (S, Cog)	2.70	1.08
41. Using flash cards in order to memorize new words (V, Mem)	2.66	1.02
11. Remembering the unfamiliar sound and asking about it later (L, Soc)	2.59	1.02
40. Physically acting out new words in order to memorize them (V, Mem)	2.54	1.08
3. Listening to the radio in English (L, Cog)	2.35	0.99

Note. R = reading; W = writing; L = listening; S = speaking; Cog = Cognitive; Com = Compensation; Met = Metacognitive; Mem = Memory; Soc = Social.

Note. Items are abbreviated.

Item 55, “Using dictionary to find the meaning of unfamiliar words,” a cognitive reading strategy, was reported most frequently by the participants. The next mostly employed strategy was item 79, “Using dictionary to find or verify the meaning or spelling of words.” This strategy is from the writing category and, like item 55, deals with referencing and using dictionaries as an aid to learning. Two strategies for paying attention to the learning material were also among the top list.

In contrast, only the mean score of the least used strategy fell into the low level of use (i.e., $M = 2.4$ and below). The next four strategies in this table were used at a medium level ($M =$ between 2.5 and 3.4). The least employed individual strategy was a cognitive listening strategy (i.e., item 3, “Listening to the radio in English”).

Research Question 6: *What is the participants’ pattern of function-based strategies?*

The mean scores of all function-based strategy categories fell into the medium level of use (see Table 4.14). The most preferred strategy category was compensation ($M = 3.32$). In order, metacognitive ($M = 3.26$), cognitive ($M = 3.23$), and social strategies ($M = 3.21$) followed. And finally, the least preferred strategy category was memory ($M = 3.01$).

Table 4.14. Descriptive Statistics of Function-based Strategy Categories (N = 138)

Strategy Category	Mean	Std. Deviation	Minimum	Maximum	Rank	Type
Memory	3.01	0.49	1.92	4.17	5	Medium
Cognitive	3.23	0.44	1.88	4.15	3	Medium
Metacognitive	3.26	0.44	2.18	4.35	2	Medium
Compensation	3.32	0.37	2.29	4.18	1	Medium
Social	3.21	0.52	2.25	4.38	4	Medium

Note. 2.4 or less = Low; 2.5 to 3.4 = Medium; 3.5 and above = High.

In order to find out the significant differences between strategy categories, a one-way repeated measures ANOVA was applied. The five strategy categories were treated as independent variables and the mean scores of the categories as dependent variables. The results showed that the participants used learning strategy categories differently, Wilks’ Lambda = .75, $F(4, 548) = 11.30$, $p < .001$. The effect size of the difference was small ($\eta^2 = .25$). Furthermore, Bonferroni post hoc test indicated that the participants used compensation strategies significantly more often than memory, cognitive, and social strategies (see Table 4.15 on the next page).

Table 4.15. Bonferroni Post Hoc Test for Differences in Function-based Strategy Categories

Source	Difference	<i>p</i>	Difference	<i>p</i>	Difference	<i>p</i>	Difference	<i>p</i>
Memory (Mem)	Com > Mem	.00**	Met > Mem	.00**	Cog > Mem	.00**	Soc > Mem	.01**
Cognitive (Cog)	Com > Cog	.02*						
Metacognitive (Met)								
Compensation (Com)								
Social (Soc)	Com > Soc	.04*						

* *p* < .05. ** *p* < .01.

In contrast, the participants reported using significantly less memory strategies than all other strategy categories.

Research Question 7: *What is the relationship between the participants' function-based strategies and their gender, age, discipline, and self-rated English proficiency level?*

For answering this question, a series of independent samples *t* tests were run for finding significant differences by gender, age, discipline, and self-rated proficiency level. In each analysis, one of factors was regarded as the independent variable and the participants' mean scores of the function-based strategy categories were treated as dependent variables. The significance level was set at *p* < .05.

Gender

Based on gender, no significant difference was detected (see Table 4.16).

Table 4.16. Independent Samples T Tests for Function-based Strategy Categories for Gender Differences (N = 138)

Strategy Category	Male (<i>n</i> = 75)		Female (<i>n</i> = 63)		<i>t</i> (136)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Memory	3.05	0.53	3.07	0.45	-0.18	.86	0.00
Cognitive	3.24	0.48	3.22	0.39	0.27	.79	0.00
Metacognitive	3.26	0.45	3.27	0.43	-0.14	.89	0.00
Compensation	3.31	0.39	3.32	0.36	-0.17	.87	0.00
Social	3.17	0.50	3.27	0.53	-1.10	.27	0.01

^a Eta squared.

Age

Like the gender variable, age did not seem to have an effect on function-based strategy use as the difference in the participants' strategy mean scores did not reach significance level (see Table 4.17).

Table 4.17. Independent Samples T Tests for Function-based Strategy Categories for Age Differences (N = 138)

Strategy Category	23 or below (<i>n</i> = 34)		24 or over (<i>n</i> = 104)		<i>t</i> (136)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Memory	2.94	0.49	3.10	0.49	-1.61	.11	0.02
Cognitive	3.16	0.38	3.25	0.46	-0.97	.34	0.01
Metacognitive	3.21	0.51	3.28	0.42	-0.80	.42	0.00
Compensation	3.34	0.32	3.31	0.39	0.47	.64	0.00
Social	3.14	0.63	3.24	0.47	-0.79	.43	0.00

^a Eta squared.

Discipline

Like the previous two variables, discipline differences did not seem to exert a significant influence on the frequency of function-based strategies the participants reported using (see Table 4.18).

Table 4.18. Independent Samples T Tests for Function-based Strategy Categories for Discipline Differences (N = 138)

Strategy Category	Social Sciences (<i>n</i> = 78)		Technical Fields (<i>n</i> = 60)		<i>t</i> (136)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Memory	3.10	0.51	3.01	0.48	1.01	.31	0.01
Cognitive	3.21	0.46	3.25	0.41	-0.46	.65	0.00
Metacognitive	3.26	0.47	3.26	0.40	0.06	.95	0.00
Compensation	3.34	0.36	3.29	0.39	0.85	.40	0.01
Social	3.20	0.52	3.24	0.51	-0.47	.64	0.00

^a Eta squared.

Self-rated English proficiency level

Despite other variables, the participants' self-rated proficiency level had a significant effect on strategy use (see Table 4.19).

Table 4.19. Independent Samples T Tests for Function-based Strategy Categories for Self-rated Proficiency Level Differences (N = 80)

Strategy Category	Low (<i>n</i> = 26)		High (<i>n</i> = 54)		<i>t</i> (78)	<i>p</i>	Effect Size ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Memory	2.78	0.40	3.11	0.53	-2.85**	.01	0.09
Cognitive	2.92	0.42	3.41	0.43	-4.87***	.00	0.23
Metacognitive	3.04	0.44	3.41	0.44	-3.80***	.00	0.16
Compensation	3.15	0.37	3.32	0.33	-2.11*	.04	0.05
Social	2.96	0.49	3.28	0.54	-2.55*	.01	0.08

* *p* < .05, two-tailed. ** *p* < .01, two-tailed. *** *p* < .001, two-tailed ^a Eta squared.

As the table shows, a higher perception of language proficiency level was associated with a significantly higher use of a wide range of strategies including memory, $t(78) = -2.85$, $p < .01$, cognitive, $t(78) = -4.87$, $p < .001$, metacognitive, $t(78) = -3.80$, $p < .001$, compensation, $t(78) = -2.11$, $p < .05$, and social, $t(78) = -2.55$, $p < .05$. The effect sizes of the differences ranged from small to moderate.

4.1.3. Learning styles and strategies

Research Question 8: *Is there any significant relationship between the participants' learning style preferences and their reported use of leaning strategies?*

The Pearson Product-Moment Correlation was computed to determine whether there were statistically significant relationships between the learning style preferences and both skill-based and function-based strategy categories. It was found out that the correlation indexes ranged from weak to moderate.

Learning styles and skill-based strategies

As shown in Table 4.20, the results indicated that visual learning style was significantly correlated with reading ($r = .20$), listening ($r = .18$), and writing strategy categories ($r = .17$) at $p < .05$. As it could be noted, the correlation coefficients for these relationships accounted for only 3% of the variance.

Table 4.20. Correlations between Learning Style Preferences and Overall and Skill-based Strategy Categories

Style Preference	Strategy Category						Overall
	Listening	Vocabulary	Reading	Speaking	Writing	Translation	
Visual	.18*	.14	.20*	.14	.17*	.13	.16
Auditory	.15	.01	.07	.06	.08	.07	.10
Kinesthetic	.32**	.23**	.30**	.24**	.23**	.27**	.32**
Tactile	.13	.14	.11	.12	.17*	.12	.15
Individual	.09	.15	.03	.05	.06	.06	.09
Group	.15	.01	.16	.16	.13	-.05	.16

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Kinesthetic learning style was significantly related to all learning strategy categories, including overall ($p < .01$). This means that those participants who preferred an active involvement in learning appeared to use a wider range of strategies significantly more often than those favoring other learning styles. However, the correlation coefficients of kinesthetic learning style preference and strategy categories of vocabulary ($r = .23$), writing ($r = .23$), speaking ($r = .24$), translation ($r = .27$), reading ($r = .30$), listening ($r = .32$), and overall ($r = .32$) explained only 5% to 10% of the variation. And finally, there was a significant relationship between tactile learning style and writing strategy category ($r = .17$), with which as little as 3% of the variance was accounted for.

Learning styles and function-based strategies

As Table 4.21 shows, visual learners tended to use cognitive ($r = .17$) and metacognitive strategies ($r = .28$). The effect sizes of the correlations were 3% and 8%, respectively.

Table 4.21. Correlations between Learning Style Preferences and Function-based Strategy Categories

Style Preference	Strategy Category				
	Memory	Cognitive	Metacognitive	Compensation	Social
Visual	.07	.17*	.28**	.07	.12
Auditory	.06	.08	.15	.10	.12
Kinesthetic	.20*	.27**	.32**	.22**	.27**
Tactile	.12	.17*	.17*	.06	.10
Individual	.09	.05	.11	.06	.02
Group	.02	.13	.14	.15	.26**

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Kinesthetic learning style was significantly associated with all function-based strategy categories including memory ($r = .20$), compensation ($r = .22$), cognitive ($r = .27$), social ($r = .27$), and metacognitive ($r = .32$). The amount of variance explained by these relationships ranged from 4% to 10%. Next, tactile learning style was weakly related to the use of cognitive and metacognitive strategies ($r = .17$). And finally, as expected, group learning styles significantly correlated with social strategy category ($r = .26$), indicating that the participants who favored group learning would use more strategies for cooperating with others. Nevertheless, the amount of shared variance was as little as 7%.

An important point to bear in mind in correlational analysis, which was addressed by J. D. Brown (1988), is that restricted range may make any correlation coefficient lower, and this could, in effect, affect the results. A cursory glance at the descriptive statistics of the variables in this study (see Tables 4.1, 4.7, and 4.14) reveals that the

mean scores of the learning style preferences were from 10.99 to 14.49, those of skill-based strategy categories were only from 3.14 to 3.44, and those related to function-based strategies were from 3.01 to 3.32. In other words, the range of the mean scores—especially that of learning strategy categories—was not large. This restricted range might, thus, lower the correlation coefficients in this study.

4.2. Discussion

In this section, the results obtained from the participants' responses to the questionnaires will be discussed in light of the relevant literature.

4.2.1. Learning styles

The Iranian graduate participants expressed a preference for kinesthetic and tactile modes that involve a practical and experiential approach to learning. They preferred a style of learning that engaged them in the totality of the language learning experience. This piece of finding is consistent with the results obtained in Isemonger and Sheppard (2003), Melton (1990), Reid (1987), Rossi-Le (1989), and Stebbins (1995). It also reveals that graduate students in the study learned best through a hands-on approach, actively exploring the physical world around them. They might become distracted easily and find it hard to sit still for long periods. Their potentials for learning are maximized if they take an active part in the tasks they are engaged in.

Moreover, the participants favored individual and group style preferences the least, the latter falling into negligible type. In other words, they found it difficult working with one or more partners in a learning activity. This was in line with studies such as Peacock (2001b), Reid (1987), Riazi and Mansoorian (2008), and Stebbins (1995). The finding that group learning style was preferred less often than almost all other style preferences shows that graduate students need more interaction with

teachers and classmates to practice and use the language in the classroom because an important element for language learning is using the language and communicating with it. For example, questions and answers and dialogs are helpful activities in this regard since they need two or more peers to participate in most of the time.

Variables affecting learning styles

Gender

In terms of gender, females found it hard working individually when compared to their male counterparts. In contrast, males disfavored engaging in group activities. This is in line with Isemonger and Sheppard's (2003) observation of females' stronger preference for group learning style. It seems that women tend to build relationships and use social networks with greater consistency than men. Accordingly, men should be encouraged to be involved in group activities and to share their views since cooperation and mutual support play an important role in language learning. The finding is, however, dissimilar to studies that found no gender-related differences in this regard (e.g., Hyland, 1993; Reid, 1987; Riazi & Mansoorian, 2008; Rossi-Le, 1989). The contradictory results present themselves as an area of further inquiry.

Age

Regarding age, it was found that younger learners were more auditory-oriented than older participants (i.e., aged 24 or over). This is in line with Dybvig's (2004) suggestion that learning style may change over time. The finding also contradicts Isemonger and Sheppard (2003) and Reid (1987) who found no age-related differences.

This finding may be viewed in light of the nature of auditory-related items on the learning style questionnaire. In other words, they try to tap whether or not the students

are mainly dependant on the teacher's explanations and comments for their language learning. On the other hand, it appears that as the students pass through their education, the role of the teacher's explanations as the primary source of auditory input is gradually decreased. They see the teacher more as a guide that can help them find their own paths to learning rather than one they could rely solely on as they often did during their undergraduate courses and previous stages of schooling. Therefore, older students, in contrast to their younger counterparts, may tend to rely less on the teacher and become more self-directed as they carry on their graduate course of study. This could be also generalized to language learning and, viewed in this light, the finding was not unexpected. However, so many other factors may be at work as well.

It is worth mentioning that because this study focused on university graduate students, the age range was very narrow. Therefore, the difference seems to be simply suggestive. A study with a broader age range would be required to draw stronger conclusions on this issue.

Discipline

Concerning major field, students in technical fields were significantly more tactile than those in social sciences; a result consistent with the one reported in Reid (1987) and dissimilar to that of Isemonger and Sheppard (2003), which revealed no difference. This may be related to the greater skills of students in technical fields in activities such as model building, collage making, and working in laboratories as an essential part of their academic career. This tendency is in sharp contrast with the greater reliance of the students majoring in social sciences on abstract ideas rather than concrete experience.

On the other hand, research suggested that social sciences and humanities majors usually favor an individual-oriented learning experience while students in technical

fields disfavor working alone (e.g., Melton, 1990; Peacock, 2001b). This difference, which was corroborated in this study, may lie in the fact that the students in technical fields are usually used to engaging in projects that require the contribution of members of a team for achieving a common purpose. Put another way, they usually engage in group-oriented activities based on cooperation and mutual support.

Self-rated English proficiency level

Most studies examining learning style preferences by proficiency reported no difference (e.g., Isemonger & Sheppard, 2003; Reid, 1987). The results of the current study, using proficiency self-ratings, also bore this out. In other words, proficiency did not seem to influence or be related to learning styles. However, Peacock (2001b) reported in his study that less proficient learners were more group-oriented than their more proficient counterparts. More research employing multiple measures of proficiency is, thus, needed to resolve the inconsistencies in this area.

4.2.2. Learning strategies

The finding of this study is consistent with several previous studies that investigated the strategy use in EFL contexts and found that learners' strategy use fell into medium use (e.g., Akbari & Talebinezhad, 2003; Bedell & Oxford, 1996; Bremner, 1999; Hong-Nam & Leavell, 2006; Klassen, 1994; Peacock & Ho, 2003; Riazi & Rahimi, 2005; Tajeddin, 2001). This indicates that learners are generally unaware of the importance of learning strategies.

Reading and compensation strategies were reported to be used more frequently than other strategies by the Iranian graduate students in this study. Concerning skill-based strategies, the high use of reading strategies is partially in line with the results obtained in Griffiths (2004b). In that study, although the students favored speaking

and listening strategies the most, they acknowledged the usefulness of reading strategies in the interviews. This result was not unexpected as the participants are used to dealing with reading passages since the early years of learning English, and the amount of printed input they receive is considerable. In their graduate study, they also have to pass courses in which they read many technical texts and articles in English.

Reading is also an invaluable source of authentic input. It is the first and most tangible way in which EFL learners may become familiar with English language. Available in the market, there are also a wealth of English stories and readers designed specifically for students at any reading ability level. Moreover, for those deciding to pursue their education, developing English language skills in general and reading skill in particular becomes of paramount importance. On the other hand, reading comprehension questions are an integral part of most university entrance examinations for PhD course. Another evidence for the importance of reading and, consequently, the greater use of reading strategies on the participants' part is that most students outperform the reading section on the TOEFL examination (the internet-based version) compared to other skills.

The students, therefore, have to develop their reading abilities. One way for them is to make use of a host of reading strategies such as using resources, reading materials for pleasure, note taking while reading, skimming for general ideas, and scanning for specific details. Some of these strategies need to be instructed to work efficiently. Therefore, the extent to which such strategies are put into effective use by the students should be an area of further investigation.

Dictionary use, a popular reading strategy among the sample in this study, is usually used least effectively. As Harvey and Yuill (1997) reported, learners use dictionaries mostly for checking on the spelling and confirming the meaning of L2

words rather than for other important reasons such as finding its collocations, or checking on its grammar. As for Iranian university students, they do not often check the pronunciation of the words they learn. In other words, they know lots of L2 words only in print; on hearing the very words, especially those without a sound-letter correspondence, they often fail to recognize them. Therefore, the instruction of such a popular strategy could help learners develop their reading abilities, resulting in a significant increase in their L2 achievement and overall proficiency.

As for function-based strategies, compensation strategies were used more often than the strategies in most other categories. This finding, as a characteristic of EFL contexts, is not dissimilar to the results of studies such as Bedell and Oxford (1996), Bremner (1999), Ku (1997), and Mullins (1992). When learning English, the participants often used compensation strategies to help them overcome limitations in existing knowledge. They may draw on prior knowledge or experience of similar situations and use such strategies as guessing the meaning of unknown words while reading or listening, using gestures in speaking to get the intended meaning across, and using synonyms in writing.

It is natural for Iranian students to make a greater use of compensation strategies as these can allow them to guess the meaning of what they have heard or read or to remain in the conversation despite their limited grammatical and vocabulary knowledge. This piece of finding bears evidence to Bedell and Oxford's (1996) tentative conclusion that "the high use of compensation strategies might be typical of Asian students" (p. 58).

In contrast to reading and compensation strategies, speaking, vocabulary learning, and memory strategies were reported to be used least often. The low use of speaking strategies came as no surprise since the context of this study is an EFL one in which

there is almost no natural opportunities for the learners to practice their English orally. On the contrary, in an ESL context (e.g., Griffiths, 2004b; Griffiths & Jordan, 2005), strategies related to listening and speaking skills are usually among popular strategies due to the availability of a rich authentic aural/oral input. Moreover, in Iranian educational system, speaking, as a productive skill, often receives least attention and its treatment is limited to mechanical repetition drills.

On the other hand, students feel no need to develop speaking abilities; they usually lack confidence to practice and put their English knowledge into use by, for example, initiating conversations or related strategies. One important way to enhance speaking abilities and boost confidence is to make use of formulaic expressions. However, learners do not often pay much attention to them. Such expressions may be memorized and used mechanically at first stages, but they would reach flexibility and automaticity only with practice and repeated use (Cohen, 2008). Students should be instructed as to the appropriate application of such valuable expressions.

It was surprising to find the participants' least reported use of vocabulary learning strategies among other strategies. Memory strategies, usually associated with vocabulary learning, were also among the least favored function-based strategies. This is consistent with the results obtained in Bremner (1999), Green and Oxford (1995), Hong-Nam and Leavell (2006), Riazi and Rahimi (2005), and Tajeddin (2001). This finding also contradicts the stereotypical description of Asian learners as showing a strong preference for strategies involving rote memorization of language words and rules as apposed to more communicative strategies (e.g., Huang & Naerssen, 1987; O'Malley & Chamot, 1990; Politzer & McGroarty, 1985). On the other hand, Oxford (1990) regarded memory strategies as a powerful tool in language learning. The contradictory results about the Asian learners' memory strategy use deserve further

attention and remind us of Littlewood's (2000) comment that we should not jump to conclusions when it comes to the effect of cultural background.

The researcher suspected the participants' lack of awareness of how to apply vocabulary learning and memory strategies in English as the reason for their lowest use of such strategies and asked a small number of them about their most common ways of memorizing L2 words. Surprisingly enough, they rarely mentioned a systematic and organized technique. Usually, they wrote only the meaning of a new L2 word on the margin of the page. Given the gradual and incremental nature of vocabulary learning, such mechanical learning strategies often fail. In contrast, deep processing strategies such as using keywords and trying to guess meaning could lead to more effective learning and longer retention (Cohen & Aphek, 1981). Moreover, the common reliance on word-meaning relationship to the exclusion of some other important components such as pronunciation, collocations, and practical usage of L2 words may make learners less successful in the long run in terms of language learning in general and vocabulary learning in particular.

Using flashcards was also disfavored by all participants. This result, which is in line with the one obtained from another sample of Iranian university learners (i.e., Riazi & Rahimi, 2005), may be related to the participants' lack of awareness of the benefits of such a strategy and/or its appropriate application. The reported infrequent use of such a strategy could deprive learners from the opportunity of multiple exposures to L2 words, resulting in ineffective learning.

As Riazi and Rahimi (2005) noted, Asian learners often employ traditional rote memorization strategies that might differ from the specific memory techniques reported on the SILL or LSUS, which was employed in the current study. In other words, the participants may know little about making a mental picture of the situation

in which the word might be used, using rhymes to remember new words, using flash cards, physically acting out new English words, and grouping new words into synonyms, antonyms, nouns, and verbs. Some of these strategies, which the participants did not report using often, are sophisticated ones and need to be instructed.

Variables affecting learning strategies

Gender

In the current study, gender did not appear to be an influential factor on the students' strategy use. Studies such as Griffiths (2003), Y. M. Kim (1995), Nisbet et al. (2005), and Rong (1999) reported no significant differences in this regard. Green and Oxford (1995) also asserted that gender-related differences are not as salient as other factors. This finding is, however, inconsistent with the results of studies that found a difference in favor of females (e.g., K. O. Lee, 2003; Mochizuki, 1999; Peacock & Ho, 2003; Shoerey, 1999).

The absence of any gender-related significant difference in this study is an issue that needs further pursuit. One explanation for this is the absence of affective strategies on the questionnaire used in the present study. Such strategies are usually favored by females as Hong-Nam and Leavell (2006) found that only these strategies were more frequently used by females.

Age

Although vocabulary learning strategies were used least often by the participants as a whole group, older students reported using significantly more of such strategies than their younger counterparts (i.e., aged 23 or below). Moreover, the difference in the mean scores of most strategy categories were in favor of older students. This is in

line with previous studies showing that older students usually used a greater number and a wider variety of strategies (Chamot & El-Dinary, 1999; Vann & Abraham, 1990). It seems that older learners feel more in need of learning English, put much more effort into learning it and dealing with the materials, and, as a consequence, tend to use more strategies

In terms of vocabulary learning strategies, older students who often decide to carry on their education are more in need of increasing their vocabulary knowledge for achieving success in PhD or TOEFL examinations. They try to memorize and learn as many words as possible to help them better deal with reading passages (e.g., academic articles), write course works or scientific papers, and understand movies in English. They also make an attempt to expand their knowledge of L2 words through memorizing synonyms of new L2 words.

Discipline

Students from diverse disciplines tended to use strategies almost similarly; that is, the participants in no one discipline felt the need to use strategies higher than those in the other discipline included in this study. This is inconsistent with studies that found a higher strategy use among students majoring in social sciences and humanities in comparison to those in technical fields (e.g., Oxford & Nyikos, 1989; Politzer & McGroarty, 1985). Nevertheless, in the current study, the difference in the mean scores of overall strategy use was in favor of students majoring in social sciences but did not reach the threshold of significance.

Self-rated English proficiency level

Proficiency level affected almost all strategy categories. Such a finding indicates that more proficient students were well aware of their needs and look for more

opportunities to practice the language in almost all skill areas. Because the measure of proficiency in this study was the participants' self-ratings, it seems that greater strategy use is associated with perceptions of higher proficiency (Oxford & Nyikos, 1989). The finding is in line with most of studies including various measures of language proficiency as a variable (Green & Oxford, 1995; Griffiths, 2003; Hong-Nam & Leavell, 2006; Magogwe & Oliver, 2007; Peacock & Ho, 2003; Sheorey, 1999; Wharton, 2000; M.-N. Yang, 2007). However, it also contradicts Griffiths (2004b) and Shmais (2003) who found no difference in strategy use by proficiency.

On the whole, although more proficient learners were often associated with a greater strategy use, research of a longitudinal type is needed before we can make strong claims about the effect of proficiency level on strategy use.

4.2.3. Learning styles and strategies

There were statistically significant relationships between the learning style preferences and learning strategy categories. Firstly, kinesthetic learning style was related to strategies from all categories. Secondly, tactile learning was associated with strategies from writing, cognitive, and metacognitive strategies. Thirdly, visual learners opted for reading, writing, listening, cognitive, and metacognitive strategies. And finally, group learning was correlated with social strategies. These results seem to be partly congruent with the findings of the studies conducted by Carson and Longhini (2002), M.-L. Chen (in press), Oxford (1991 as cited in Oxford, 1995), and Rossi-Le (1989), in which it was revealed that there were significant relationships between the learners' sensory preferences and their learning strategy use.

Kinesthetic learners reported using a wide variety of strategies when learning the English language. This is in agreement with previous studies finding such a link between an active mode of learning and the application of a wide range of strategies

(M.-L. Chen, in press; Rossi-Le, 1989). This link indicates that in any form of learning, including language learning, total involvement in the learning process leads learners to engage actively in the learning materials and pay greater attention to the material, hence calling for a greater and a more varied repertoire of strategies. Learners favoring kinesthetic learning style found it enjoyable to use strategies from all categories including reading, listening, writing, speaking, vocabulary learning, cognitive, metacognitive, memory, social, and compensation. Engaging in the application of such a wide array of strategies makes these learners more flexible in their language learning. Therefore, in face of language learning problems, this flexibility provides the learners with the opportunity for actively trying out many solutions (i.e., through strategy application) from among the available alternatives to achieve the best possible outcome.

Equipped with a touch-oriented mode of learning, tactile learners in this study tended to deploy more writing strategies such as writing different types of texts in English and revising a passage several times after writing the first draft. A tendency for touching and manipulating objects (in this case, pen and paper) is necessary for application of such strategies, and tactile learners seem to be equipped with such a tendency. For instance, they may favor making an outline of what they are going to write in the pre-writing stage and editing the passage after writing the first draft. In addition, tactile learners preferred more cognitive and metacognitive strategies. However, the association was very weak.

Visual learners reported employing more reading, writing, and listening strategies. It should be stated that the essential component of the first two strategy categories is visual input. In other words, they are text-oriented with which Iranian students are familiar and feel comfortable from the early days of learning English.

Visual learners usually read extensively in the L2, try to be adept at skimming and scanning, and make attempts to write different types of texts in English.

As for the relationship between visual learning and listening strategies, it could be stated that visual input is often associated with sound. As a popular source of input, there are readers with accompanying cassettes and CDs available in the market. Most learners are used to listening to the audio tracks while following the text on the printed page. Doing so, they may make use of such listening strategies as trying not to translate word for word, paying attention to the rise and fall of speech, and making inferences and guesses about the meaning of certain words and structures. Moreover, as the results indicated, the learners in this study also chose watching English movies as a favorite strategy. This suggests that, watching movies, the learners strain their ears for comprehending what they hear. In such a case, they are trying out strategies such as remembering the unfamiliar sounds and words and asking about them later, paying attention to keywords, practicing skim listening, and making guesses about the meaning of certain words and phrases.

Visual learning style was also correlated weakly with cognitive and moderately with metacognitive strategies. This was expected since these two categories include mostly strategies from reading, writing, and listening categories such as reading for pleasure in English, planning how to approach a reading passage, writing different kinds of texts in English, revising the writing passage, watching movies and TV programs in English, and listening for keywords. This shows that visual learners in the study found it favorable to use strategies for manipulating the input and exerting control on their language learning processes.

And finally, the association of group learning style with social strategies stands to reason. Those learners inclined to learning with other learners naturally tend to

employ more interactive strategies such as asking for repetition, correction, or clarification. Such learners like to ask questions for a variety of purposes without any hesitation. They are also good at cooperating with others. It can also be added that they can empathize with others.

Two points are worth noting regarding the results related to the relationship between learning styles and strategies. The first point concerns auditory learning style as one of the major preferences among the participants. Interestingly enough, auditory learners did not show a significant preference in using any one strategy category over others. The reason for this may lie in the fact that Iran is considered an EFL context in which there does not exist rich authentic input. In such an environment, the only sources of auditory input may include cassettes and CDs specifically designed for language learning and L2 movies, which are often exploited outside the language classroom. Although these types of input may provide learners with authentic instances of how English language is actually used, they do not necessarily lead to acquisition. Therefore, the fact that auditory learning was not significantly correlated with any strategy category may be related to the insufficient auditory input that prevents learners from employing effective strategies to solve their language learning problems. For example, EFL learners are naturally deprived from using interactive listening strategies such as asking for clarification or repetition and asking the speaker to slow down if they do not understand what he says.

The second point relates to the participants' use of compensation strategies, as the most frequently used strategies. Except for kinesthetic mode of learning, other learning style preferences failed to significantly correlate with compensation strategies. This suggests that learners functioning in these learning styles were not aware of the importance of compensation strategies or did not feel comfortable with

using them. Therefore, they did not report using such strategies along with other strategies. Compensation strategies are said to equip students with the necessary techniques to understand and produce the language despite the limitations in their knowledge of the new language. On the other hand, students favoring kinesthetic learning style, as the dominant mode of learning in this and most other studies, often report making effective use of compensation strategies such as using mimes and gestures, using a synonym or a circumlocution, switching to mother tongue when necessary, guessing intelligently by making use of linguistic or other clues, and getting help from others in order to make up for their deficiencies in L2 knowledge.

On the whole, it should be stressed once more that learning styles and strategies are two important variables in language learning often interacting with one another. They are also affected by some other learner factors, making the picture more complicated. This study was an attempt to shed some light on the nature of the relationship between these two constructs. However, as seen, there were also some inconsistencies between the findings of this study and those obtained from past research. This might be attributed to factors such as the discrepancy between what the learners reported doing and what they actually do while learning the L2, the construct validity of the questionnaires used in the study, the tight distribution of the graduate learners that led to narrow-ranged mean scores and low correlation coefficients, and other methodological issues.

Chapter Five

Introduction

Literature Review

Methodology

Results & Discussion



CONCLUSION

In this chapter, first a brief summary of the study will be offered. Then, the limitations of the study will be outlined. Next, the implications of the findings for research and practice will be stated. Finally, the recommendations for further research will be presented.

4.1. Summary of the Study

The results of this study supported and contributed to research on the perceptual learning style preferences of graduate students and their use of skill-based and function-based strategies in learning English as a foreign language. The most significant contribution of the study lied in the analysis of the relationships that exist among learner characteristics (i.e., gender, age, discipline, self-rated English proficiency level), perceptual learning style preferences, and skill-based and function-based strategies. The study aimed to answer the following research questions:

1. What is the pattern of learning style preferences among graduate students of different disciplines at Shahid Beheshti University?
2. What is the relationship between the participants' learning style preferences and their gender, age, discipline, and self-rated English proficiency level?
3. What is the participants' pattern of skill-based strategies?
4. What is the relationship between the participants' skill-based strategies and their gender, age, discipline, and self-rated English proficiency level?
5. What are the participants' five most and least frequently used strategies?
6. What is the participants' pattern of function-based strategies?
7. What is the relationship between the participants' function-based strategies and their gender, age, discipline, and self-rated English proficiency level?
8. Is there any significant relationship between the participants' learning style preferences and their reported use of leaning strategies?

The participants involved in the study were 138 graduate students majoring in diverse disciplines at Shahid Beheshti University, Tehran, Iran. They were randomly selected based on a two-stage sampling procedure and were asked to respond to two translated and pretested questionnaires: (1) Reid's (1984) PLSPQ for measuring learning style preferences and (2) Cohen, Oxford, and Chi's (2002) LSUS for measuring skill-based strategies and also function-based strategies (i.e., through

reclassifying the questionnaire items). The analysis of the data obtained from the first questionnaire revealed that:

1. Regarding Iranian graduate students' learning style preferences, kinesthetic, tactile, and auditory modes were preferred as major learning styles. Visual and individual learning preferences were chosen as minor. Finally, group learning fell in the negative type. In addition, the participants significantly preferred kinesthetic and tactile learning styles to almost all other modalities. On the other hand, group learning style was preferred less often than almost all other style preferences.
2. Concerning the background variables, firstly, females were more group-oriented than males who, in turn, showed a stronger individual orientation. Secondly, younger learners were more auditory-oriented than their older counterparts. Thirdly, students in technical fields had a stronger tactile preference when compared to those in social sciences who were, in turn, more individual-oriented. Finally, the participants' ratings of their English proficiency level did not seem to exert any influence on their learning style.

The analysis of the results obtained from the LSUS offered answers to the next three research questions. It was found out that:

3. The frequency of the overall strategy use and the use of the six skill-based strategy categories all fell in the medium range. Graduate students were found to use reading strategies significantly more often than strategies in all other categories. On the other hand, they reported using speaking and vocabulary learning strategies less often than reading, listening, and writing strategies.
4. Concerning the background variables, firstly, no significant difference was found in the participants' strategy use by gender and discipline. Secondly, older students reported using more vocabulary learning strategies than their younger counterparts. Finally, the participants' perceptions of their English proficiency level significantly and positively affected their skill-based strategies with more proficient learners using more strategies in all categories including overall.
5. As for the individual strategy items, using dictionary to find or verify the meaning or spelling of unfamiliar words was among the top strategies, and strategies such as physically acting out new words in order to memorize them and listening to the radio in English were preferred the least.

The items on the LSUS were reclassified to answer the next two research questions regarding function-based strategies. The results indicated that:

6. The frequency of the use of function-based strategy categories all fell in the medium range. The participants reported using compensation strategies significantly more often than memory, cognitive, and social strategies. On the other hand, they were found to use memory strategies less often than strategies in all other categories.
7. Concerning the background variables, firstly, no significant difference was found in the participants' strategy use by gender, age, and discipline. Secondly, the participant' perceptions of their English proficiency level significantly and positively affected their function-based strategies with more proficient learners reported using more strategies in all categories.

The analysis of the relationship between the data obtained from both questionnaires provided an answer to the last research question. It was revealed that:

8. Regarding the relationship between the participants' learning style preferences and their skill-based and function-based strategies, firstly, kinesthetic modality was found to be significantly correlated with all strategy categories including overall. Secondly, tactile learning was associated with strategies from writing, cognitive, and metacognitive categories. Thirdly, visual learners opted for reading, writing, listening, cognitive, and metacognitive strategies more often. Finally, group learning was correlated with social strategies.

4.2. Limitations of the Study

The picture painted in this study is far from complete. It suffers from certain limitations. First of all, the population of the graduate students was all from Shahid Beheshti University in central Iran, and the results may not be generalized to represent all graduate students in Iran.

As stated earlier, the descriptive statistics regarding the data obtained from graduate learners' learning styles and learning strategies questionnaires showed that the distribution of the mean scores of the subscales on the two questionnaires was not

wide, and, according to J. D. Brown (1988), tight distribution will tend to influence the correlation coefficients. This possibly affected the result of the lower correlation coefficients in the correlation model in the present study.

Regarding the instruments, the LSUS was a new questionnaire specifically translated and pretested for the purpose of this study. Although attempts were made to somewhat address the reliability-related issues, the questionnaire needs to be more refined for further studies. Moreover, the collected data were restricted to self-report questionnaires. As it has been stated, self-report learning strategy questionnaires are also seen to have three potential limitations. Firstly, learners may not understand or interpret accurately the strategy description in each item. Secondly, they may claim to use strategies they do not actually use. And finally, they may fail to recall strategies they have used in the past (C. White, Schramm, & Chamot, 2007). Therefore, the data on self-report questionnaire should be triangulated with those obtained from, for example, structured interviews in order to come to a clearer picture of learners' strategy use.

As for the other questionnaire, the PLSPQ, the same problem holds true as there are educators who do not even recognize questionnaire as a safe measure of learning styles. This instrument has itself come under criticism concerning its construct validity. However, it is worth noting that, despite the criticisms, the questionnaire is still widely in use as a main source of collecting data on EFL/ESL learners' learning style preferences.

In terms of the background variables, age and English proficiency level were not attended adequately. In other words, the age range was not wide enough to generate valid data because the participants were all graduate university students. The findings are, therefore, restricted to the sample in the study and may not be generalizable to

students of other educational levels including undergraduate or high school levels. Regarding the other variable, the students' English proficiency level was reflected in their own perception of their English language ability. As Mochizuki (1999) asserted, self-ratings may not be a reliable indicator of proficiency level.

4.3. Implications for Theory Development and Research

The theoretical implications of this study relate primarily to factors that influence the process of learning a second or foreign language. As the findings demonstrated, graduate students from different fields of study and with differential perceptions of their English ability vary in their strategic approaches to language learning in part due to diversity in their perceptual learning style preferences. In addition, learner characteristics such as gender and age appeared to interact with learning styles to shape learning behaviors.

A complex system of variables is, thus, constantly at work influencing the learning strategies individual learners choose as well as their success or failure as language learners. On the other hand, the different ways in which stimuli are perceived and processed as individuals are exposed to a new language system help determine the strategies that will become the basis for the language learning process. The pattern of perceptual learning style preferences and skill-based strategies should be considered as an important element when constructing a theoretical model of language learning and individual differences.

Moreover, for eliciting information regarding learners' learning strategies, most of the available and widespread questionnaires are designed based on function-based strategies (i.e., memory, cognitive, etc.). This study supplied the less researched field of skill-based strategy use (i.e., listening, reading, etc.) and its relationship with learning style preferences. These two constructs were also viewed in light of learner

variables including gender, age, discipline, and self-rated proficiency level, thus providing a clearer picture of language learning in general and individual differences in particular.

4.4. Implications for Curriculum Developers and Material Producers

Concerning the implication related to curriculum developers and material producers, it can be stated that they should definitely work in cooperation with both teachers and students. Together with teachers, they should decide what aspects of learning styles they need to identify and what instruments should be used to identify students' learning styles and strategies. It should be the curriculum developers' responsibility to allocate enough time in the curriculum for teachers to conduct styles and strategies research in their classrooms.

With respect to material producers, they should produce materials that teachers will use throughout their class time. That is, the phases of the lessons should be well designed starting with a warm-up activity and ending with an appropriate follow-up task related to the topic dealt with. What is more, the materials they produce should be congruent with the students' common learning styles and they should be appealing to the students' needs and interests so that they could opt for and employ appropriate strategies most efficiently. The fact that students from different disciplines tend to function well within differential learning styles, and accordingly, use diverse strategies could greatly help producers in their way to develop suitable learning materials.

The outcomes of the study can, too, contribute to materials and syllabus design by indicating which activities or areas of language are most likely to meet with students' approval. Hence, the pivotal role of the students in the actual processes of materials and syllabus design must not be ignored.

This process requires continuous evaluation of every single stage of the materials produced. For this reason, curriculum developers and material producers should collect feedback from teachers and students in order to identify the weaknesses and strengths of their products. All in all, curriculum developers and material producers should work cooperatively with teachers and students so that they can design better programs, appropriate materials, and diversified activities that will promote a more suitable language learning atmosphere.

4.5. Implications for Pedagogical Practice

The first implication is for EFL students. The findings of this study are helpful to students in demonstrating the importance of learning style identification. Students should also learn to recognize the strategies that they are using. They are recommended to identify the best ways through which they can learn the language more fruitfully. Knowledge of one's learning styles and strategies may be beneficial in that the learner will be aware of his strengths and weaknesses in terms of learning experiences and can use the information to facilitate and compensate for his shortcomings in language learning. Future learning could be enriched if learners maintain their strengths and improve on their weaknesses.

An awareness of learning styles and strategies can also help EFL students, particularly self-directed adults, take control of their learning, make appropriate strategy choices, and maximize the potential for learning. Aside from that, this knowledge improves one's self esteem because the students will feel more comfortable and prepared to take on the learning challenge and also gives students the confidence needed to achieve their goals.

On the other hand, teachers should help students discover their own learning style preferences and strategy repertoire and provide constructive feedback about the advantages and disadvantages of various styles. In addition, teachers should respect the learners' present preferences and encourage their development, while at the same time creating opportunities for students to try different ways of learning. In fact, a teacher who truly understands culture and learning styles and believes that all students can learn will offer opportunities for success to all students.

Measuring and understanding students' learning styles and strategies in English classrooms, the teacher can take advantage of this information and design more appropriate lessons for his students. In other words, he needs to understand learners' learning styles first and start teaching from the most familiar learning ways for students because their first learning strategy use usually extends from their habitual modes. The frequency of the use of the six learning strategy categories provides a basic understanding of how often the graduate learners employ them in their English learning. The students' learning style preferences and strategy use and the amount of their variation based on background factors can also serve as a reference point for teaching. This information can be of great help to faculty members and instructors in planning and designing materials and choosing activities for Iranian graduate learners in English classrooms.

To cater the often diverse learning styles of all students, the teacher should not stick to the textbooks. Supplementary materials such as short stories, films, tapes, handouts should be used. Furthermore, EFL institutions should install modern language laboratories. Students would also like to see more television programs and video films that make language learning more exciting and meaningful.

Although expected, the finding that group learning was a negative style preference for this sample of graduate learners appears to be a warning for language teachers. It is strongly recommended that teachers do their best to encourage students to form groups and share ideas. They ought to be aware that students are eager to be actively engaged in classroom debates and to get familiar with interactive skills. Some efforts should be made to encourage the students to work in groups. For example, they can take advantage of small-group learning and design it as one of the activities in the classroom; hence, each learner will have more time and more opportunities to perform in his own group.

In addition to all these, the teacher should be equipped with the knowledge of a good deal of strategies that he will be able to propose to students so that they can deal with difficult academic tasks. If, for instance, one strategy does not work, they should be able to apply an alternative. What is more, the teacher should design activities that will require learners to make use of a variety of strategies. After the completion of the task, a discussion session with students should be held talking about the strategies they made use of and whether or not these strategies proved to be useful. In this way, while the teacher will have the opportunity to see to what extent each of the students is successful in the orchestration of the strategies, the students will be able to hear or see what strategies their peers used. Thus, they will be given the opportunity to make self-evaluation, decide which is better for them, or learn an alternative way of doing a particular task.

An area of concern in the results was the participants' low use of vocabulary learning and memory strategies despite their paramount importance. It is a good idea that the teacher encourages the students to use vocabulary learning strategies such as putting the new words in a meaningful sentence and trying to infer the meaning of the

new vocabulary. Students should be made aware that dictionary should be used as a last resort. Moreover, they should come to know that learning a word is not just knowing its Persian equivalent. Rather, they need to learn other related components such as pronunciation, grammatical points, and common collocations of the new word in order to be able to function efficiently in the target language. To this end, learning to use a monolingual dictionary effectively may help them progress in their knowledge of L2 words.

Learners' unfamiliarity with effective strategy application may be one reason for the low use of vocabulary learning strategies. In such a case, integrated and explicit strategy instruction will be of great help. Instruction of sophisticated strategies such as using flash cards and mnemonic devices could provide learners with the opportunity to learn words more efficiently yet more enjoyably. In some other cases, strategy instruction can also be implemented to compensate for styles that interfere with the efficient development of language proficiency.

And finally, the teacher should take over the role of a researcher as well in order not only to identify his students' individual differences but also to know how to cater their language learning needs. What is meant here is not administering some questionnaires haphazardly, but being aware of each step taken and having a rationale for taking it. In other words, the teacher should choose the right tools to identify the students' learning styles and strategies, and, then, the findings should not be put aside. On the contrary, he should make use of such findings to adopt the most appropriate teaching style. Of course, adopting teaching techniques that will accommodate the needs of all the students might be difficult. However, only if the teacher becomes more sensitive to the students' learning styles and tries to strike a balance in his instruction by making use of a wide variety of tasks in the classroom, he is able to

treat the students equally and fairly. In addition to using questionnaires, the teacher should constantly observe the students very closely so that he can diagnose any changes in their learning profiles. Doing so, many possible mismatches between the teacher's teaching style and the students' learning styles and strategies are gradually reduced, hence improving the latter's language learning.

4.6. Suggestions for Further Research

In order to more fully understand the combined role of learning styles and strategies in language learning, additional research efforts are needed. Triangulated procedures, such as classroom observation, think-aloud protocols, or interviews should be used to collect data on graduate learners' learning styles and strategies so as to add to or support the data obtained from questionnaires. This would provide a more profound understanding of how learners manipulate the learning strategies with their learning preferences.

The effect of variables such as gender, age, discipline, and proficiency should be attended adequately in further research attempts. In this study, the finding that gender had no significant effect on strategy use ran contrary to the results obtained in most other studies. This inconsistency should be an area of further inquiry. Age effect, in particular, should be isolated and explored through more expanded age ranges in order to be able to draw valid conclusions.

As for discipline, larger subsamples of students from among a wider variety of fields of study should be employed in future research. More specifically, research is needed to sample students from different majors (e.g., financial management vs. civil engineering) rather than the common use of combined forms (e.g., social sciences/humanities vs. engineering/physical sciences). The small size of the subsamples in this study precluded the possibility of such comparisons.

Regarding English proficiency level, various measures of proficiency (e.g., self-rated and TOEFL scores) should be used at the same time in a longitudinal study. Only in this way can one make claims about the possible causal effect of proficiency level on strategy use.

Further research on the relationship between learning styles and strategies might also focus on the other factors such as motivation, task performance, and the length of exposure to the language that might exert an influence on language learners' learning styles and, especially, learning strategy use. In addition, the ways in which language learners adapt their styles and strategies over time to meet the challenges of different learning environments might become the basis of a longitudinal study.

Follow-up research efforts might focus on further validating the questionnaires used in this study. Recently, the construct validity of the PLSPQ has been called into question. A large-scale factor analytic investigation is needed to check the validity of the questionnaire's underlying factors hypothesized by Reid (1984). This is also in line with Isemonger and Sheppard's (2007) call to do validity- and reliability-related analyses on different translations of this popular instrument. Besides, learning styles could be assessed using other measures including validated inventories extracted from the items on the PLSPQ (e.g., the LSI) or independent learning style measures (e.g., the SAS).

As for the second questionnaire used in this study, the LSUS might be employed in other educational settings including undergraduate or high school levels to see what pattern of skill-based strategy use would emerge. The instrument should also be retested and refined with a larger sample. Moreover, its concurrent validity might be established with the SILL, as a valid measure of strategy use.

Further investigations into Iranian graduate learners' learning strategy use could specifically focus on each of the language skills (e.g., reading or writing). Future studies could, thus, focus on strategies learners deploy while performing tasks related to specific skills. The respective subscale on the LSUS could be used to corroborate the results obtained from other sources of data elicitation such as retrospective protocols.

Finally, the learning environment of the foreign language learner should be studied to assess the relationships that might exist among perceptual learning style preferences, learning strategies, instructional contexts, and teaching methods. In other words, research efforts should be aimed at creating a fully integrated profile of the language learner in terms of the affective, cognitive, perceptual, and educational influences governing foreign language development.

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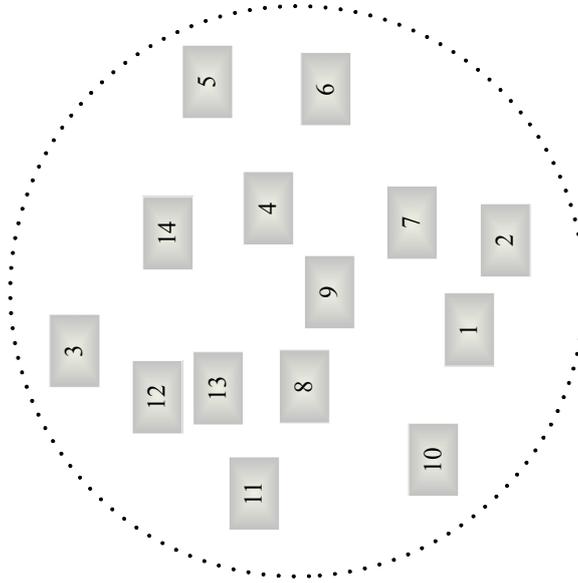
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Appendices

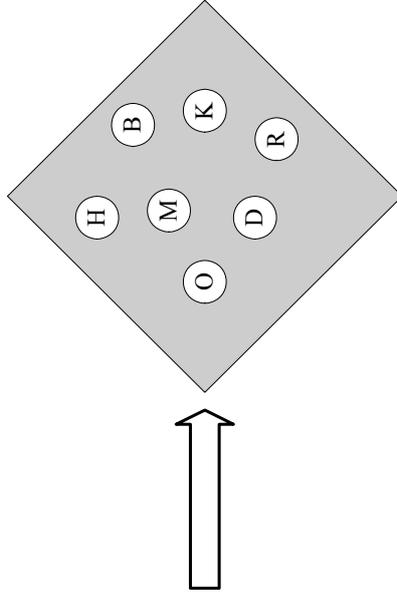
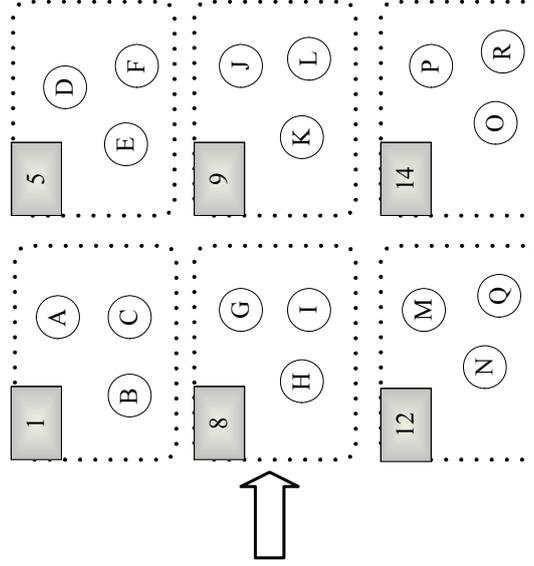
Appendix A

Sampling Procedure (Two-Stage Cluster Sampling)

First Stage: A random sample of six faculties was drawn from among all faculties



Second Stage: From among each of the selected faculties, one or two departments were randomly selected



1. Architecture and Urban Planning
2. Biological Sciences
3. Earth Sciences
4. Economics and Political Sciences
5. Education and Psychology
6. Electrical and Computer Engineering
7. Islamic Teachings Department
8. Management and Accounting
9. Law
10. Letters and Human Sciences
11. Mathematical Sciences
12. Nuclear Engineering
13. Physical Education and Sport Sciences
14. Sciences

A-R: Different departments

Appendix B

PLSPQ (original version)

Directions

People learn in many different ways. For example, some people learn primarily with their eyes (visual learners) or with the ears (auditory learners); some people prefer to learn by experience and/or by "hands-on" tasks (kinesthetic or tactile learners); some people learn better when they work alone while others prefer to learn in groups.

This questionnaire has been designed to help you identify the way(s) you learn best--the way(s) you *prefer* to learn.

Read each statement on the following pages. Please respond to the statements **AS THEY APPLY TO YOUR STUDY OF ENGLISH**. Decide whether you agree or disagree with each statement. For example, if you strongly agree, mark:

Strongly Disagree (SD)	Disagree (D)	Undecided (U)	Agree (A)	Strongly agree (SA)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please respond to each statement quickly, without too much thought. Try not to change your responses after you choose them. Please answer all the questions. Please use a pen to mark your choices.

Item	SA	A	U	D	SD
1. When the teacher tells me the instructions I understand better.					
2. I prefer to learn by doing something in class.					
3. I get more work done when I work with others.					
4. I learn more when I study with a group.					
5. In class, I learn best when I work with others.					
6. I learn better by reading what the teacher writes on the					
7. When someone tells me how to do something in class, I learn it					
8. When I do things in class, I learn better.					
9. I remember things I have heard in class better than things I have					
10. When I read instructions, I remember them better.					
11. I learn more when I can make a model of something.					
12. I understand better when I read instructions.					
13. When I study alone, I remember things better.					
14. I learn more when I make something for a class project.					
15. I enjoy learning in class by doing experiments.					
16. I learn better when I make drawings as I study.					
17. I learn better in class when the teacher gives a lecture.					
18. When I work alone, I learn better.					
19. I understand things better in class when I participate in role-					

Item	SA	A	U	D	SD
20. I learn better in class when I listen to someone.					
21. I enjoy working on an assignment with two or three classmates.					
22. When I build something, I remember what I have learned					
23. I prefer to study with others.					
24. I learn better by reading than by listening to someone.					
25. I enjoy making something for a class project.					
26. I learn best in class when I can participate in related activities.					
27. In class, I work better when I work alone.					
28. I prefer working on projects by myself.					
29. I learn more by reading textbooks than by listening to lectures.					
30. I prefer to work by myself					

Appendix C

PLSPQ (translated version for pretesting)

- 1- وقتی معلم نکات درسی را توضیح می‌دهد بهتر یاد می‌گیرم.
- 2- ترجیح می‌دهم با انجام فعالیت‌های عملی در کلاس مطالب را یاد بگیرم.
- 3- وقتی به‌طور مشترک با دیگران کاری را انجام می‌دهم کار بیشتری انجام می‌دهم.
- 4- وقتی همراه با یک گروه مطالعه می‌کنم بیشتر یاد می‌گیرم.
- 5- در کلاس وقتی با دیگران کار می‌کنم بهتر یاد می‌گیرم.
- 6- با خواندن آنچه معلم بر روی تابلو می‌نویسد بهتر یاد می‌گیرم.
- 7- وقتی کسی به من می‌گوید چطور کاری در کلاس انجام بدهم آن کار را بهتر یاد می‌گیرم.
- 8- وقتی کارها را در کلاس انجام می‌دهم بهتر یاد می‌گیرم.
- 9- آنچه را که در کلاس درس شنیده‌ام به خاطر می‌سپارم تا آنچه را که در کلاس خوانده‌ام.
- 10- وقتی توضیحات را می‌خوانم بهتر آنها را به خاطر می‌سپارم.
- 11- وقتی مدلی از چیزی می‌سازم نکته آموزشی را بهتر یاد می‌گیرم.
- 12- وقتی توضیح نکات درسی را می‌خوانم آن‌ها را بهتر یاد می‌گیرم.
- 13- وقتی به تنهایی مطالعه می‌کنم چیزها را بهتر به خاطر می‌سپارم.
- 14- وقتی پروژه‌ای را به‌عنوان کار کلاسی انجام می‌دهم بیشتر یاد می‌گیرم.
- 15- با انجام کارهای عملی از یادگیری در کلاس لذت می‌برم.
- 16- وقتی مطالعه می‌کنم با ایجاد الگوهایی تصویری از نکته‌های درسی آن‌ها را بهتر یاد می‌گیرم.
- 17- با شنیدن مطالبی که معلم به‌صورت گفتاری توضیح می‌دهد بهتر یاد می‌گیرم.
- 18- وقتی به تنهایی کاری را انجام می‌دهم بهتر یاد می‌گیرم.
- 19- وقتی در کلاس نقشی را بازی می‌کنم (مثلاً نقشی در یک مکالمه و...) چیزها را بهتر می‌فهمم.
- 20- در کلاس درس وقتی به کسی گوش می‌کنم بهتر یاد می‌گیرم.
- 21- وقتی تکلیفی را با دو یا سه هم‌کلاس انجام می‌دهم بیشتر از آن لذت می‌برم.
- 22- وقتی چیزی را می‌سازم مطالب آموزشی را بهتر به خاطر می‌سپارم.
- 23- ترجیح می‌دهم با دیگران مطالعه کنم.
- 24- با خواندن بهتر یاد می‌گیرم تا اینکه به کسی گوش کنم.

- 25- لذت می‌برم که برای پروژه کلاسی چیزی درست کنم.
- 26- زمانی به بهترین وجه یاد می‌گیرم که بتوانم در فعالیتهای مرتبط با درس در کلاس شرکت کنم.
- 27- در کلاس وقتی به تنهایی کار می‌کنم بهتر کار می‌کنم.
- 28- ترجیح می‌دهم به تنهایی روی پروژه‌ها کار کنم.
- 29- با خواندن کتاب‌های درسی بیشتر یاد می‌گیرم تا با گوش کردن به سخنان معلم.
- 30- ترجیح می‌دهم به تنهایی کار کنم.

Appendix D

Results of Pretesting the PLSPQ

Subscale	Item Numbers	Cronbach's α
Visual	6, 10, 12, 24, 29	.680
Auditory	1, 7, 9, 17, 20	.733
Kinesthetic	2, 8, 15, 19, 26	.782
Tactile	11, 14, 16, 22, 25	.704
Individual	13,18, 27, 28, 30	.891
Group	3, 4, 5, 21, 23	.849
Total	1-30	.705

Case Processing Summary ^a

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Q1	37	92.5%	3	7.5%	40	100.0%
Q2	40	100.0%	0	.0%	40	100.0%
Q3	40	100.0%	0	.0%	40	100.0%
Q4	40	100.0%	0	.0%	40	100.0%
Q5	40	100.0%	0	.0%	40	100.0%
Q6	39	97.5%	1	2.5%	40	100.0%
Q7	31	77.5%	9	22.5%	40	100.0%
Q8	39	97.5%	1	2.5%	40	100.0%
Q9	35	87.5%	5	12.5%	40	100.0%
Q10	40	100.0%	0	.0%	40	100.0%
Q11	39	97.5%	1	2.5%	40	100.0%
Q12	39	97.5%	1	2.5%	40	100.0%
Q13	39	97.5%	1	2.5%	40	100.0%
Q14	39	97.5%	1	2.5%	40	100.0%
Q15	40	100.0%	0	.0%	40	100.0%
Q16	39	97.5%	1	2.5%	40	100.0%
Q17	38	95.0%	2	5.0%	40	100.0%
Q18	38	95.0%	2	5.0%	40	100.0%
Q19	39	97.5%	1	2.5%	40	100.0%
Q20	37	92.5%	3	7.5%	40	100.0%
Q21	40	100.0%	0	.0%	40	100.0%
Q22	32	80.0%	8	20.0%	40	100.0%
Q23	40	100.0%	0	.0%	40	100.0%
Q24	39	97.5%	1	2.5%	40	100.0%
Q25	39	97.5%	1	2.5%	40	100.0%
Q26	40	100.0%	0	.0%	40	100.0%
Q27	38	95.0%	2	5.0%	40	100.0%
Q28	39	97.5%	1	2.5%	40	100.0%
Q29	39	97.5%	1	2.5%	40	100.0%
Q30	38	95.0%	2	5.0%	40	100.0%

a. Limited to first 100 cases.

Visual

6. I learn better by reading what the teacher writes on the chalkboard.
10. When I read instructions, I remember them better.
12. I understand better when I read instructions.
24. I learn better by reading than by listening to someone.
29. I learn more by reading textbooks than by listening to lectures.

6 - با خواندن آنچه معلم بر روی تابلو می‌نویسد بهتر یاد می‌گیرم.
10 - وقتی توضیحات را می‌خوانم بهتر آنها را به خاطر می‌سپارم.
12 - وقتی توضیح نکات درسی را می‌خوانم آن‌ها را بهتر یاد می‌گیرم.
24 - با خواندن بهتر یاد می‌گیرم تا اینکه به کسی گوش کنم.
29 - با خواندن کتاب‌های درسی بیشتر یاد می‌گیرم تا با گوش کردن به سخنان معلم.

Statistics

		Q6	Q10	Q12	Q24	Q29
N	Valid	39	40	39	39	39
	Missing	1	0	1	1	1
Mean		3.49	3.88	4.05	3.62	3.28
Std. Deviation		.942	.723	.605	1.016	.887
Variance		.888	.522	.366	1.032	.787

Case Processing Summary

		N	%
Cases	Valid	37	92.5
	Excluded ^a	3	7.5
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.680	.691	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q6	14.84	5.973	.247	.222	.719
Q10	14.46	6.089	.415	.231	.640
Q12	14.24	6.356	.449	.331	.637
Q24	14.70	4.159	.668	.504	.500
Q29	15.05	5.275	.475	.367	.610

Auditory

1. When the teacher tells me the instructions I understand better.
7. When someone tells me how to do something in class, I learn it better.
9. I remember things I have heard in class better than things I have read.
17. I learn better in class when the teacher gives a lecture.
20. I learn better in class when I listen to someone.

1- وقتی معلم نکات درسی را توضیح می‌دهد بهتر یاد می‌گیرم.
7- وقتی کسی به من می‌گوید چطور کاری در کلاس انجام بدهم آن کار را بهتر یاد می‌گیرم.
9- آنچه را که در کلاس درس شنیده‌ام به خاطر می‌سپارم تا آنچه را که در کلاس خوانده‌ام.
17- با شنیدن مطالبی که معلم به صورت گفتاری توضیح می‌دهد بهتر یاد می‌گیرم.
20- در کلاس درس وقتی به کسی گوش می‌کنم بهتر یاد می‌گیرم.

Statistics

		Q1	Q7	Q9	Q17	Q20
N	Valid	37	31	35	38	37
	Missing	3	9	5	2	3
Mean		4.03	3.00	3.54	3.39	3.05
Std. Deviation		.799	1.125	.980	.946	.848
Variance		.638	1.267	.961	.894	.719

Case Processing Summary

		N	%
Cases	Valid	23	57.5
	Excluded ^a	17	42.5
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.733	.767	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q1	12.70	8.858	.686	.582	.646
Q7	14.04	9.498	.188	.142	.820
Q9	13.48	7.443	.592	.395	.646
Q17	13.39	7.613	.589	.630	.648
Q20	13.87	8.573	.601	.433	.656

Kinesthetic

2. I prefer to learn by doing something in class.
8. When I do things in class, I learn better.
15. I enjoy learning in class by doing experiments.
19. I understand things better in class when I participate in role-playing.
26. I learn best in class when I can participate in related activities.

2- ترجیح می‌دهم با انجام فعالیت های عملی در کلاس مطالب را یاد بگیرم.
8- وقتی کارها را در کلاس انجام می‌دهم بهتر یاد می‌گیرم.
15- با انجام کارهای عملی از یادگیری در کلاس لذت می‌برم.
19- وقتی در کلاس نقشی را بازی می‌کنم (مثلاً نقشی در یک مکالمه و...) چیزها را بهتر می‌فهمم.
26- زمانی به بهترین وجه یاد می‌گیرم که بتوانم در فعالیتهای مرتبط با درس در کلاس شرکت کنم.

Statistics

		Q2	Q8	Q15	Q19	Q26
N	Valid	40	39	40	39	40
	Missing	0	1	0	1	0
Mean		3.63	3.33	3.88	3.62	3.73
Std. Deviation		.979	.869	1.090	.935	.847
Variance		.958	.754	1.189	.874	.717

Case Processing Summary

		N	%
Cases	Valid	38	95.0
	Excluded ^a	2	5.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.782	.780	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q2	14.55	8.362	.493	.355	.761
Q8	14.92	9.210	.336	.197	.806
Q15	14.37	6.617	.699	.550	.687
Q19	14.61	7.975	.543	.362	.745
Q26	14.50	7.500	.746	.571	.682

Tactile

- | |
|--|
| 11. I learn more when I can make a model of something. |
| 14. I learn more when I make something for a class project. |
| 16. I learn better when I make drawings as I study. |
| 22. When I build something, I remember what I have learned better. |
| 25. I enjoy making something for a class project. |

- | |
|---|
| 11- وقتی مدلی از چیزی می‌سازم نکته آموزشی را بهتر یاد می‌گیرم. |
| 14- وقتی پروژه‌ای را به‌عنوان کار کلاسی انجام می‌دهم بیشتر یاد می‌گیرم. |
| 16- وقتی مطالعه می‌کنم با ایجاد الگوهایی تصویری از نکته‌های درسی آن‌ها را بهتر یاد می‌گیرم. |
| 22- وقتی چیزی را می‌سازم مطالب آموزشی را بهتر به خاطر می‌سپارم. |
| 25- لذت می‌برم که برای پروژه کلاسی چیزی درست کنم. |

Statistics

		Q11	Q14	Q16	Q22	Q25
N	Valid	39	39	39	32	39
	Missing	1	1	1	8	1
Mean		4.00	3.90	3.97	3.59	3.21
Std. Deviation		1.000	.852	.959	.875	1.080
Variance		1.000	.726	.920	.765	1.167

Case Processing Summary

		N	%
Cases	Valid	31	77.5
	Excluded ^a	9	22.5
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.704	.696	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q11	14.74	7.065	.427	.300	.670
Q14	14.77	8.514	.196	.188	.746
Q16	14.87	7.183	.376	.198	.691
Q22	15.16	6.340	.674	.669	.569
Q25	15.55	5.656	.666	.626	.555

Individual

13. When I study alone, I remember things better.
18. When I work alone, I learn better.
27. In class, I work better when I work alone.
28. I prefer working on projects by myself.
30. I prefer to working by myself.

13- وقتی به تنهایی مطالعه می‌کنم چیزها را بهتر به خاطر می‌سپارم.
18- وقتی به تنهایی کاری را انجام می‌دهم بهتر یاد می‌گیرم.
27- در کلاس وقتی به تنهایی کار می‌کنم بهتر کار می‌کنم.
28- ترجیح می‌دهم به تنهایی روی پروژه‌ها کار کنم.
30- ترجیح می‌دهم به تنهایی کار کنم.

Statistics

		Q13	Q18	Q27	Q28	Q30
N	Valid	39	38	38	39	38
	Missing	1	2	2	1	2
Mean		3.97	3.63	3.05	3.38	3.39
Std. Deviation		.903	.852	.985	1.016	.887
Variance		.815	.725	.970	1.032	.786

Case Processing Summary

		N	%
Cases	Valid	37	92.5
	Excluded ^a	3	7.5
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.891	.893	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q13	13.41	10.637	.643	.499	.887
Q18	13.76	10.356	.792	.645	.857
Q27	14.30	9.381	.803	.676	.851
Q28	14.00	9.556	.731	.612	.870
Q30	13.95	10.330	.721	.594	.870

Group

- | |
|--|
| 3. I get more work done when I work with others. |
| 4. I learn more when I study with a group. |
| 5. In class, I learn best when I work with others. |
| 21. I enjoy working on an assignment with two or three classmates. |
| 23. I prefer to study with others. |

- | |
|--|
| 3- وقتی به طور مشترک با دیگران کاری را انجام می‌دهم کار بیشتری انجام می‌دهم. |
| 4- وقتی همراه با یک گروه مطالعه می‌کنم بیشتر یاد می‌گیرم. |
| 5- در کلاس وقتی با دیگران کار می‌کنم بهتر یاد می‌گیرم. |
| 21- وقتی تکلیفی را با دو یا سه همکلاس انجام می‌دهم بیشتر از آن لذت می‌برم. |
| 23- ترجیح می‌دهم با دیگران مطالعه کنم. |

Statistics

		Q3	Q4	Q5	Q21	Q23
N	Valid	40	40	40	40	40
	Missing	0	0	0	0	0
Mean		3.43	2.83	3.25	3.28	2.45
Std. Deviation		1.107	1.279	.927	1.012	1.061
Variance		1.225	1.635	.859	1.025	1.126

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded ^a	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.849	.850	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q3	11.80	12.164	.634	.624	.824
Q4	12.40	10.451	.749	.663	.793
Q5	11.98	13.410	.591	.423	.835
Q21	11.95	11.844	.777	.621	.788
Q23	12.78	12.846	.567	.557	.841

Appendix E

LSUS (original version)

The following is a survey of strategies that you may use frequently or perhaps not at all in your efforts to learn or enhance your language skills. See if you can identify the strategies you actually tend to use both in learning material for the first time (for example, sounds, words or phrases, and structures) and those strategies that you have not used or use only rarely. There are no “right” or “wrong” answers. It is simply an opportunity for you to see what kind of a language learner and language user you are.

Read the description of the strategies in each category and for each strategy, mark in the left column in the space provided your use or non-use of each strategy:

- 1 I use this strategy and find it useful.
- 2 I have tried this strategy, but welcome learning more about it.
- 3 I have never tried this strategy.

Listening Strategy Use

Strategies I use to increase my exposure to the new language:

- _____ 1. I regularly attend out-of-class events where the new language is spoken.
- _____ 2. I make an ongoing effort to listen to talk shows on the radio, watch TV shows, or go see movies in the new language.
- _____ 3. If I am in a restaurant or store where the staff speak the target language, I usually ask questions in it so I can practice listening to native-speaker talk.
- _____ 4. If I encounter people in public having a conversation in the target language, I generally listen in to see if I can get the gist of what they are saying.

Strategies I use to become more familiar with the sounds in the new language:

- _____ 5. I keep practicing all the sounds in the new language until I am comfortable with them.
- _____ 6. I am constantly looking for associations between the sound of a word or phrase in the new language with the sound of a familiar word.
- _____ 7. I do my best to imitate the way native speakers talk.
- _____ 8. I generally make an effort to remember unfamiliar sounds I hear, and ask a native speaker later.

Strategies I use for better understanding the new language in conversation:

Before I listen to the language:

- _____ 9. I sometimes decide to pay special attention to specific language aspects; for example, the way the speaker pronounces certain sounds.

- _____ 10. I often prepare myself by predicting what the other person is going to say based on what has been said so far.
- _____ 11. I sometimes prepare for a guest lecture or special talk I will hear in the target language by reading up on it beforehand.

When I listen in the language:

- _____ 12. I usually listen for those keywords that seem to carry the bulk of the meaning.
- _____ 13. I listen for word and sentence stress to see what natives emphasize when they speak.
- _____ 14. I pay attention to where pauses tend to come and how long they last.
- _____ 15. I pay attention to the rise and fall of speech by native speakers – the music of it.
- _____ 16. I practice “skim listening” by paying attention to some parts and ignoring others.
- _____ 17. I make every effort to understand what I have heard without translating it word-for-word into my native language.
- _____ 18. I generally pay attention to the context of what is being said.
- _____ 19. I listen for specific details to see whether I can understand them.

If I do not understand some or most of what someone says in the language:

- _____ 20. I may well ask the speaker to repeat if the message isn't clear to me.
- _____ 21. I ask the speaker to slow down if I think s / he is speaking too fast for me.
- _____ 22. I usually ask for clarification if I haven't understood it the first time around.
- _____ 23. I use the speaker's tone of voice as a clue to meaning.
- _____ 24. I make educated guesses and inferences about the topic based on what has already been said.
- _____ 25. I usually draw on my general background knowledge in an effort to get the main idea.
- _____ 26. I look to the speaker's gestures and general body language as clues to meaning.

Vocabulary Strategy Use

To memorize new words:

- _____ 27. I often pay attention to the structure of part of the word or all of it.
- _____ 28. I often analyze words to identify the meaning of a part or several parts of them.
- _____ 29. I group the words according to the part of speech (e.g., nouns, verbs, adjectives).
- _____ 30. I tend to associate the sound of the new word with the sound of a familiar word.
- _____ 31. I sometimes use rhyming to remember new words.
- _____ 32. I often make a mental image of new words whose meaning can be depicted.
- _____ 33. I sometimes learn a new word by listing it along with other words related to it by topic.

- _____ 34. I almost always write the new word in a meaningful sentence.
- _____ 35. I may well practice new action verbs by acting them out.
- _____ 36. I have a system for using flash cards to learn new words.

In order to review vocabulary:

- _____ 37. I go over new words often at first to make sure I know them.
- _____ 38. I go back periodically to refresh my memory of words I learned earlier.

In order to recall vocabulary:

- _____ 39. I remind myself of a word meaning by first thinking of meaningful parts of the word (e.g., the prefix or the suffix).
- _____ 40. I will usually make an effort to remember the situation where I heard or saw the word, and if written, may even remember the page or sign it was written on.
- _____ 41. I sometimes visualize the spelling of the new word in my mind.

As a way of making use of new vocabulary:

- _____ 42. I use words just learned in order to see if they work for me.
- _____ 43. I use familiar words in different combinations to make new sentences.
- _____ 44. I make a real effort to use idiomatic expressions in the new language.

Speaking Strategy Use

In order to practice for speaking:

- _____ 45. I may well say new expressions repeatedly to myself in order to practice them.
- _____ 46. I am likely to practice new grammatical structures in different situations to check out my confidence level with the structures.
- _____ 47. I ask myself how a native speaker might say something and I attempt to practice saying it that way.

In order to engage in conversations:

- _____ 48. I regularly seek out people with whom I can speak the new language.
- _____ 49. I initiate conversations in the new language as often as I can.
- _____ 50. I frequently direct the conversation to topics for which I know vocabulary.
- _____ 51. I tend to plan out in advance what I want to say.
- _____ 52. I frequently ask questions as a way to be sure I am involved in conversation.
- _____ 53. I anticipate what the other person is going to say based on what has been said so far.
- _____ 54. I usually avoid topics I don't have language for.
- _____ 55. I often look to others to correct my errors in speaking and welcome the feedback.
- _____ 56. I frequently use expressions that call for both language and cultural

knowledge, such as requesting, apologizing, or complaining in the target language.

- _____ 57. If I don't know how to perform culturally-based language expressions such as apologizing, I sometimes ask natives what they do.

When I can't think of a word or expression:

- _____ 58. I often ask the person I'm talking with to help me out.
_____ 59. I will look for a different way to express the idea; for example, I use a synonym or describe the idea or object I want to talk about.
_____ 60. I use words from my native language, but I add vowels or consonants so that they seem like words in the target language.
_____ 61. On occasion I may make up new words if I do not know the right ones.
_____ 62. Whenever necessary I use gestures as a way of conveying my meaning.
_____ 63. I am likely to switch back to my own language momentarily if I know my conversation partner can understand what I am saying.

Reading Strategy Use

With regard to reading habits in the target language:

- _____ 64. I make it a point to read extensively in the target language.
_____ 65. I often read for pleasure in the target language.
_____ 66. I make a real effort to find reading material that is at or near my level.

As basic reading strategies:

- _____ 67. I often plan how I am going to read a text, monitor to see how my reading is going, and then check to see how much of it I understood.
_____ 68. I first skim an academic text to get the main idea and then go back and read it more carefully.
_____ 69. I will usually read a story or dialog several times until I can understand it.
_____ 70. I often look for how the text is organized and pay attention to headings and subheadings.

_____ 71. It is common for me to make ongoing summaries either in my mind or in the margins of the text.
_____ 72. I usually make predictions as to what will appear next.

When I encounter words and structures I do not understand:

- _____ 73. I usually guess the approximate meaning by using clues from the surrounding context.
_____ 74. I generally use a dictionary so that I can get a detailed sense of what individual words mean.

Writing Strategy Use

As basic writing strategies:

- _____ 75. I usually practice writing the alphabet of the new language.
- _____ 76. I plan how I am going to write an academic essay, monitor to see how my writing is going, and then check to see how well I wrote what I wanted to.
- _____ 77. I often make an effort to write different kinds of texts in the target language (e.g., personal notes, messages, letters, and course papers).
- _____ 78. I frequently take class notes in the new language.

While I am writing an essay:

- _____ 79. When I cannot think of the correct expression to write, I usually find a different way to express the idea; for example, I use a synonym or describe the idea.
- _____ 80. I am likely to review what I have already written before continuing to write new material in an essay.
- _____ 81. It is common for me to use reference materials such as a glossary, a dictionary, or a thesaurus to help me find or verify words in the target language.
- _____ 82. I postpone editing my writing until I have gotten my ideas down.

Once I have written a draft essay:

- _____ 83. I often revise the essay once or twice to improve the language and content.
- _____ 84. I usually look for ways to get feedback from others, such as having a native writer put the text in his / her own words, and then I compare it to my original version.

Strategic Use of Translation

In order to enhance language learning and use:

- _____ 85. I often plan out what I want to say or write in my native language and then translate it into the target language.
- _____ 86. I tend to translate when reading in order to keep my train of thought and basically make the text more comprehensible to me.
- _____ 87. While I am listening to someone, I often translate parts of what they have said into my own language to help store the concepts in my mind.

To work directly in the target language as much as possible:

- _____ 88. I make every effort to put my native language out of my mind and think only in the target language.
- _____ 89. I do all I can to understand what I have heard or read without translating it word-for-word into my own language.
- _____ 90. I am cautious about transferring words or concepts directly from my language to the target language.

Appendix F

LSUS (modified version)

Listening Strategies

1. I attend out-of-class events where English is spoken.
2. I try to watch movies and TV programs and to listen to the radio in English.
3. If I encounter people in public having a conversation in English, I listen in to see if I can get the gist of what they are saying.
4. I practice all the sounds in English until I am comfortable with them.
5. I look for associations between the sound of a word or phrase in English with the sound of a familiar word.
6. I try to imitate the way native speakers talk.
7. Before I listen, I decide to pay special attention to specific language aspects; for example, the way the speaker pronounces certain sounds.
8. Before I listen, I prepare myself by predicting what the other person is going to say based on what has been said so far.
9. Before I listen, I prepare for a special talk I will hear in English by reading up on it beforehand.

★When I listen in English,...

10. I try to remember unfamiliar sounds I hear, and ask a native speaker (an English teacher or a friend who knows English) later.
11. I listen for those keywords that seem to carry the bulk of the meaning.
12. I listen for word and sentence stress.
13. I pay attention to where pauses tend to come and how long they last.
14. I pay attention to the rise and fall of speech by native speakers.
15. I practice “skim listening” by paying attention to some parts and ignoring others.
16. I try to understand what I have heard without translating it word-for-word into Persian.
17. I pay attention to the context of what is being said.
18. I listen for specific details to see whether I can understand them.

✳If I don't understand some of what someone says in English,...

19. I ask the speaker to repeat if the message isn't clear to me.
20. I ask the speaker to slow down if I think he is speaking too fast.
21. I ask for clarification if I haven't understood it the first time.
22. I use the speaker's tone of voice as a clue to meaning.
23. I make educated guesses and inferences about the topic based on what has already been said.
24. I draw on my general background knowledge in an effort to get the main idea.
25. I look to the speaker's gestures and general body language as clues to meaning.

Vocabulary Learning Strategies

26. I go over new words to make sure I know them.
27. I write new words in a meaningful sentence.
28. I learn a new word by listing it along with other words related to it by topic.
29. I make a mental image of new words.
30. I group words according to the part of speech (e.g., nouns, verbs, adjectives).
31. I use rhyming to remember new words.
32. I use words just learned in order to see if they work for me.
33. I use familiar words in different combinations to make new sentences.
34. I try to use idiomatic expressions in English.
35. I go back periodically to refresh my memory of words I learned earlier.

****To memorize the new word,...***

36. I pay attention to the structure of it.
37. I analyze the word to identify the meaning of a part or several parts of it (e.g., the root, the prefix, or the suffix).
38. I associate the sound of the new word with the sound of a familiar word.
39. I practice the new word by acting it out.
40. I have a system for using flash cards.

****To recall the new word,...***

41. I remind myself of a word meaning by first thinking of meaningful parts of the word (e.g., the prefix or the suffix).
42. I try to remember the situation where I heard or saw the word, and if written, may even remember the page or sign it was written on.
43. I visualize the spelling of the new word in my mind.

Reading Strategies

44. I make it a point to read extensively in English.
45. I read for pleasure in English.
46. I try to find reading material that is at or near my level.
47. I plan how I am going to read a text, monitor to see how my reading is going, and then check to see how much of it I understood.
48. I first skim a text to get the main idea and then go back and read it more carefully.
49. I read a story or dialog several times until I can understand it.
50. I look for how the text is organized and pay attention to headings and subheadings.
51. I make ongoing summaries either in my mind or in the margins of the text.
52. I make predictions as to what will appear next.
53. When I encounter words and structures I don't understand, I guess the approximate meaning by using clues from the surrounding context.

54. When I encounter words and structures I don't understand, I use reference materials such as a dictionary or a grammar book so that I can get a detailed sense of what individual words mean.

Speaking Strategies

55. In order to practice for speaking, I say new expressions repeatedly to myself.
56. In order to practice for speaking, I ask myself how a native speaker might say something and I attempt to practice saying it that way.
57. I practice new grammatical structures in different situations to check out my confidence level with the structures.
58. I seek out people with whom I can speak English.
59. I initiate conversations in English.
60. I direct the conversation to topics for which I know vocabulary.
61. I plan out in advance what I want to say.
62. I ask questions as a way to be sure I am involved in conversation.
63. I anticipate what the other person is going to say based on what has been said so far.
64. I avoid topics I don't have language for.
65. I look to others to correct my errors in speaking.
66. I use expressions that call for both language and cultural knowledge, such as requesting, apologizing, or complaining in English.
67. If I don't know how to perform culturally-based language expressions such as apologizing, I ask for help.
68. I switch back to Persian momentarily if I know my conversation partner can't understand what I am saying.

****When I can't think of a word or expression,...***

69. I ask the person I'm talking with to help me out.
70. I look for a different way to express the idea; for example, I use a synonym or describe the idea or object I want to talk about.
71. I use equivalent words from Persian.
72. I make up new words.
73. Whenever necessary I use gestures as a way of conveying my meaning.

Writing Strategies

74. I practice writing the alphabet of English.
75. I try to write different kinds of texts in English (e.g., personal notes, messages, letters, or emails).
76. I plan how I am going to write an essay and then check to see how well I wrote what I wanted to.
77. I take class notes in English.
78. I review what I have already written before continuing to write new material in an essay.

79. When I can't think of the correct expression to write, I find a different way to express the idea; for example, I use a synonym or describe the idea.
80. I use reference materials such as a dictionary to help me find or verify words in English.
81. I postpone editing my writing until I have gotten my ideas down.
82. After writing the first draft, I revise the essay once or twice to improve the language and content.
83. After writing the first draft, I look for ways to get feedback from others, such as having a native writer (an English teacher or a friend who knows English) put the text in his own words, and then I compare it to my original version.

Translation Strategies

84. I plan out what I want to say or write in Persian and then translate it into English.
85. I translate when reading in order to keep my train of thought and basically make the text more comprehensible to me.
86. While I am listening, I translate parts of what they have said into Persian to help store the concepts in my mind.
87. I try to put Persian out of my mind and think only in English.
88. I try to understand what I have heard or read without translating it word-for-word into Persian.
89. I am cautious about transferring words or concepts directly from Persian to English.

Appendix G

LSUS (translated version for pretesting)

راهبردهای مهارت گوش دادن

- 1- سعی می‌کنم در موقعیت‌های ارتباطی به زبان انگلیسی در خارج از کلاس شرکت کنم.
- 2- برنامه‌ها و فیلم‌های انگلیسی را می‌بینم و به برنامه‌های انگلیسی رادیو گوش می‌دهم.
- 3- هنگامی که افراد به زبان انگلیسی صحبت می‌کنند، برای فهمیدن موضوع صحبت‌شان به حرف آن‌ها گوش می‌دهم.
- 4- تمام صداهای زبان انگلیسی را تا زمانی که به آن‌ها تسلط پیدا کنم تمرین می‌کنم.
- 5- بین صدای کلمه‌ی جدید انگلیسی و صدای کلمات آشنا ارتباط برقرار می‌کنم تا بتوانم آن کلمه‌ی جدید را بهتر به خاطر بسپارم.
- 6- سعی می‌کنم شیوه‌ی صحبت کردن انگلیسی زبانان را تقلید کنم.
- 7- قبل از گوش دادن به مطالب انگلیسی، به جنبه‌های خاصی از زبان، مثل شیوه‌ی تلفظ برخی صداها، توجه می‌کنم.
- 8- قبل از گوش دادن به مطالب انگلیسی، سعی می‌کنم سخنان گوینده را بر اساس موضوع مطالب پیش‌بینی کنم.
- 9- قبل از گوش دادن به مطالب انگلیسی، سعی می‌کنم با مطالعه در مورد آن مطالب، خودم را برای درک بهتر متن آماده کنم.

* در حین گوش دادن به مطالب انگلیسی،...

- 10- صداهای جدیدی را که می‌شنوم به خاطر می‌سپارم و بعداً از یک انگلیسی زبان (معلم یا یک دوست مسلط به زبان انگلیسی) می‌پرسم.
 - 11- به کلمات کلیدی متن که بیشترین کمک را به درک محتوای متن می‌کنند، توجه کنم.
 - 12- به تکیه (استرس) کلمات و جملات توجه می‌کنم.
 - 13- به جاهایی که گوینده به منظور خاصی مکث می‌کند و به مدت زمان این مکث توجه می‌کنم.
 - 14- به افت و خیز لحن کلام توجه می‌کنم.
 - 15- به صورت انتخابی به نکات مهم توجه می‌کنم و جزئیات را نادیده می‌گیرم.
 - 16- بدون ترجمه‌ی کلمه به کلمه‌ی مطالب انگلیسی به فارسی در ذهن خود، آن‌ها را مستقیماً به زبان انگلیسی درک می‌کنم.
 - 17- به موقعیت کاربرد مطلبی که به آن گوش می‌دهم توجه می‌کنم.
 - 18- برای درک بهتر مطلب، به جزئیات خاص توجه می‌کنم.
- * اگر بخشی از چیزی را که کسی می‌گوید متوجه نشوم،...
- 19- از گوینده می‌خواهم آن را تکرار کند در صورتی که مطلب برای من نامفهوم باشد.
 - 20- از گوینده می‌خواهم آرام‌تر صحبت کند در صورتی که احساس کنم خیلی تند صحبت می‌کند.
 - 21- از گوینده می‌خواهم بیشتر توضیح دهد در صورتی که مطلب را برای بار اول متوجه نشوم.

- 22- برای درک بهتر مطلب، از لحن صدای گوینده کمک می‌گیرم.
- 23- بر اساس مطالبی که قبلاً گفته شده، مطالب بعدی را حدس می‌زنم.
- 24- برای درک بهتر مطلب، از دانسته‌های خود کمک می‌گیرم.
- 25- برای درک بهتر مطلب، از حالات چهره و ایما و اشاره‌های گوینده کمک می‌گیرم.

راهنمایی‌های استفاده از کلمات

- 26- کلمات جدید را بارها تکرار می‌کنم تا مطمئن شوم آن‌ها را یاد گرفته‌ام.
- 27- کلمات جدید را داخل جمله‌ای می‌گذارم تا بتوانم آن‌ها را بهتر به خاطر بسپارم.
- 28- کلمات جدید را بر اساس موضوع دسته‌بندی کرده و به خاطر می‌سپارم.
- 29- کلمات جدید را با ایجاد تصویر ذهنی از آن‌ها به خاطر می‌سپارم.
- 30- کلمات جدید را بر اساس نوع کلام (اسم، فعل، صفت، یا قید) دسته‌بندی کرده و به خاطر می‌سپارم.
- 31- کلمات مشابه هم‌قافیه را کنار هم ردیف کرده و سپس آن‌ها را به خاطر می‌سپارم.
- 32- کلماتی را که به تازگی یاد گرفته‌ام در جملات و موقعیت‌های مختلف به کار می‌برم.
- 33- کلماتی را که فرا گرفته‌ام در ترکیب‌های مختلف استفاده می‌کنم تا جمله‌های جدیدی بسازم.
- 34- سعی می‌کنم اصطلاحات زبان جدید را نیز فرا گرفته و به کار ببرم.
- 35- کلماتی را که قبلاً یاد گرفته‌ام مرتباً مرور می‌کنم.

* برای حفظ کردن کلمه‌ی جدید،...

- 36- به ساختار آن کلمه توجه می‌کنم.
- 37- آن کلمه را به اجزایش (مانند ریشه، پسوند، یا پیشوند) تقسیم کرده تا معنای آن را بهتر به خاطر بسپارم.
- 38- بین صدای (تلفظ) آن کلمه و صدای کلمات آشنا ارتباط برقرار می‌کنم.
- 39- کاری که آن کلمه بیانگر آن است را عملاً انجام می‌دهم تا بتوانم کلمه را بهتر به خاطر بسپارم.
- 40- از کارت‌واژه استفاده می‌کنم (کلمه را روی برگه‌ای کوچک نوشته و تعریف یا دیگر مشخصات آن را پشت برگه می‌نویسم).
- 41- برای به یاد آوردن معنی کلمات، ابتدا به بخش معناداری از آن‌ها توجه می‌کنم (مثل پسوند یا پیشوند).
- 42- برای به یاد آوردن معنی کلمات، سعی می‌کنم جایی که نخستین بار آن‌ها را شنیده یا دیده‌ام به خاطر بسپارم (مثلاً این که کلمه در کجای صفحه و یا در کدام کتاب به کار رفته است).
- 43- برای به یاد آوردن معنی کلمات، املاهای آن‌ها را در ذهن خود مجسم می‌کنم.

راهنمایی‌های مهارت خواندن

- 44- سعی می‌کنم فرصت کافی جهت خواندن هر چه بیشتر متون انگلیسی را فراهم آورم.
- 45- متون انگلیسی را برای لذت و سرگرمی نیز می‌خوانم.
- 46- فقط متونی را که در سطح زبانی من است می‌خوانم.
- 47- ابتدا برنامه‌ریزی می‌کنم که چطور متن انگلیسی را بخوانم، در حین خواندن کنترل می‌کنم درک مطلب چگونه پیش می‌رود، و پس از خواندن نیز بررسی می‌کنم که چه قدر از متن را فهمیده‌ام.
- 48- نخست متن انگلیسی را برای درک کلی آن یک بار مرور می‌کنم و سپس با دقت بیشتری آن را دوباره از ابتدا می‌خوانم.
- 49- برای درک بهتر متن انگلیسی، آن را چندین بار می‌خوانم.
- 50- برای درک کلی متن انگلیسی، از ساختار متن نیز کمک می‌گیرم؛ مثلاً به عناوین و سرفصل‌های متن توجه می‌کنم.
- 51- در حین خواندن، از مطالب خلاصه‌برداری می‌کنم (یا در ذهن خود و یا در حاشیه‌ی متن).
- 52- در حین خواندن، سعی می‌کنم مطالب بعدی را پیش‌بینی کنم.
- 53- زمانی که به کلمه‌ای ناآشنا برمی‌خورم، نزدیک‌ترین معنای آن کلمه را با استفاده از نشانه‌های موجود در متن حدس می‌زنم.
- 54- زمانی که به کلمات و ساختارهای ناآشنا برمی‌خورم، از کتب مرجع مانند کتاب‌های دستور زبان و یا فرهنگ لغت (دیکشنری) استفاده می‌کنم.

راهبردهای مهارت صحبت کردن

- 55- برای تمرین صحبت کردن، کلمات و عبارات جدید را بارها تکرار می‌کنم تا مطمئن شوم آن‌ها را یاد گرفته‌ام.
- 56- برای تمرین صحبت کردن، از خود می‌پرسم یک انگلیسی زبان چگونه مطلب خاصی را بیان می‌کند و سپس سعی می‌کنم آن را همان‌گونه بیان کنم.
- 57- برای آموختن سطح دانش خود نسبت به قواعد گرامری، آن‌ها را در جمله‌ها و موقعیت‌های مختلف به کار می‌برم.
- 58- به دنبال افرادی می‌گردم که بتوانم با آن‌ها انگلیسی صحبت کنم.
- 59- سعی می‌کنم شروع کننده‌ی مکالمه به زبان انگلیسی باشم.
- 60- سعی می‌کنم در مورد موضوعاتی که با کلمات مربوط به آن آشنا هستم صحبت کنم.
- 61- سعی می‌کنم خودم را از قبل در مورد آنچه که می‌خواهم بگویم آماده کنم.
- 62- در حین صحبت با افرادی که به زبان انگلیسی صحبت می‌کنند، سؤال می‌پرسم تا نشان دهم در گفتگو شرکت دارم.
- 63- سعی می‌کنم سخن بعدی گوینده را بر اساس مطالب بیان شده پیش‌بینی کنم.
- 64- از صحبت درباره‌ی موضوعاتی که نمی‌توانم به انگلیسی بیان کنم، خودداری می‌کنم.
- 65- از دیگران می‌خواهم اشتباهاتم را در استفاده از زبان انگلیسی اصلاح کنند.

66- برای بیان منظوری خاص (مثل درخواست کردن، عذرخواهی کردن، یا شکایت کردن) از کلمات و عباراتی که نشان‌دهنده زبان و فرهنگ انگلیسی است استفاده می‌کنم.

67- اگر برای بیان منظوری خاص (مثل عذرخواهی کردن) کلمات و عبارات مورد نیاز را ندانم، از فرد مقابل کمک می‌گیرم.

68- در حین صحبت به زبان انگلیسی، چنانچه متوجه شوم فرد مقابل منظور من را نمی‌فهمد، به زبان فارسی صحبت می‌کنم.

*** زمانی که نتوانم کلمه یا عبارت مناسب انگلیسی را پیدا کنم،...**

69- از فرد مقابل کمک می‌گیرم.

70- از راهی دیگر آن مفهوم را بیان می‌کنم؛ برای مثال از کلمه‌ی مترادف استفاده می‌کنم و یا آن مفهوم را تعریف می‌کنم.

71- از معادل فارسی آن کلمه یا عبارت استفاده می‌کنم.

72- سعی می‌کنم خودم کلمه‌ی جدیدی ابداع کنم.

73- در صورت لزوم، مفهوم مورد نظر را با ایما و اشاره بیان می‌کنم.

راهبردهای مهارت نوشتن

74- نوشتن الفبای انگلیسی را تمرین می‌کنم.

75- نوشتن انواع مختلف متن را به زبان انگلیسی تمرین می‌کنم (مانند یادداشت‌های شخصی، پیغام، نامه، و یا ایمیل).

76- قبل از نوشتن، مطالبی را که می‌خواهم روی کاغذ بیاورم مرور می‌کنم و در پایان متن را برای اصلاح اشتباهات بررسی می‌کنم.

77- در کلاس زبان، به زبان انگلیسی یادداشت‌برداری می‌کنم.

78- پیش از نوشتن مطالب جدید، مطالبی را که قبلاً نوشته‌ام بازبینی می‌کنم.

79- در حین نوشتن، چنانچه نتوانم کلمه‌ی مناسب را پیدا کنم، از راهی دیگر آن مفهوم را بیان می‌کنم (مانند استفاده از کلمه‌ی مترادف و یا تعریف آن مفهوم).

80- در حین نوشتن، برای پیدا کردن معنای کلمات و یا اطمینان از درستی املاي آن‌ها، از فرهنگ لغت (دیکشنری) استفاده می‌کنم.

81- تنها پس از نوشتن تمام مطالب، متن را بازخوانی و ویرایش می‌کنم.

82- پس از نوشتن نسخه‌ی اولیه، برای اصلاح اشتباهات، متن را چندین بار بازخوانی می‌کنم.

83- پس از نوشتن نسخه‌ی اولیه، از دیگران می‌خواهم اشتباهاتم را اصلاح کنند؛ مثلاً از یک انگلیسی‌زبان (معلم یا یک دوست

مسلط به زبان انگلیسی) می‌خواهم که متن را دوباره به زبان خودش بنویسد و سپس آن نوشته را با متن اصلی خودم مقایسه می‌کنم.

راهبردهای ترجمه

84- ابتدا آنچه را که می‌خواهم بگویم یا بنویسم به زبان فارسی آماده می‌کنم و سپس آن را به زبان انگلیسی ترجمه می‌کنم.

- 85- در حین خواندن متن انگلیسی، برای درک بهتر مطلب، ابتدا متن را به زبان فارسی ترجمه می‌کنم.
- 86- در حین گوش دادن، بخش‌هایی از آنچه که گفته می‌شود را در ذهن خود به فارسی ترجمه می‌کنم تا رشته کلام را از دست ندهم.
- 87- در حین استفاده از زبان انگلیسی، مستقیماً با استفاده از کلمات انگلیسی به تفکر می‌پردازم و جملات را در ذهن خود نخست از فارسی به انگلیسی ترجمه نمی‌کنم.
- 88- سعی می‌کنم مطلبی را که می‌خوانم یا می‌شنوم بدون ترجمه‌ی کلمه به کلمه به زبان فارسی درک کنم.
- 89- در مورد انتقال مستقیم واژه‌ها و مفاهیم زبان فارسی به زبان انگلیسی با احتیاط عمل می‌کنم.

Appendix H

Results of Pretesting the LSUS

Subscale	Item Numbers	Cronbach's α
Listening	1-25	.880
Vocabulary	26-43	.870
Reading	44-54	.737
Speaking	55-73	.758
Writing	74-83	.697
Translation	84-89	.406
Overall	1-89	.944

Language Learning Strategies Survey

Gender		Listening	Vocabulary	Reading	Speaking	Writing	Translation
Male	N	28	28	28	28	28	28
	Mean	3.4253	2.8952	3.3448	3.2250	3.1619	3.3845
	Std. Deviation	.50441	.48777	.56324	.47418	.49456	.49254
Female	N	16	16	16	16	16	16
	Mean	3.4494	3.0903	3.6000	3.4276	3.3375	3.4479
	Std. Deviation	.49013	.72913	.57802	.44447	.70315	.74714
Total	N	44	44	44	44	44	44
	Mean	3.4341	2.9661	3.4376	3.2987	3.2258	3.4076
	Std. Deviation	.49366	.58639	.57547	.46884	.57736	.58992

Items with more than 3% missing value

	N	Mean	Std. Deviation	Missing	
				Count	Percent
Q1	42	3.31	.975	2	4.5
Q4	42	3.10	1.185	2	4.5
Q12	42	3.21	1.138	2	4.5
Q17	42	3.55	1.017	2	4.5
Q36	42	3.12	1.109	2	4.5
Q80	42	3.88	.942	2	4.5

Listening

25. If I don't understand some of what someone says in English, I look to the speaker's gestures and general body language as clues to meaning.

25- برای درک بهتر مطلب، از حالات چهره و ایما و اشاره‌های گوینده کمک می‌گیرم.

Reliability Statistics

Cronbach's Alpha	N of Items
.880	25

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q1	82.30	165.843	.394	.877
Q2	82.48	164.133	.456	.875
Q3	81.91	162.648	.513	.874
Q4	82.58	157.189	.608	.871
Q5	82.45	161.256	.472	.875
Q6	81.73	163.267	.524	.874
Q7	82.36	160.801	.504	.874
Q8	82.24	165.189	.363	.878
Q9	82.67	164.229	.333	.879
Q10	82.73	161.142	.572	.872
Q11	81.70	164.468	.582	.873
Q12	82.36	164.801	.363	.878
Q13	82.45	159.193	.530	.873
Q14	82.06	159.434	.590	.871
Q15	82.30	168.593	.253	.881
Q16	82.42	154.752	.622	.870
Q17	82.12	159.860	.630	.871
Q18	82.64	164.051	.461	.875
Q19	82.06	163.996	.418	.876
Q20	81.97	165.843	.343	.878
Q21	81.85	167.820	.341	.878
Q22	82.24	165.127	.453	.875
Q23	82.03	168.780	.344	.878
Q24	81.88	170.297	.287	.879
Q25	81.73	172.642	.195	.880

Vocabulary

42. To recall the new word, I try to remember the situation where I heard or saw the word, and if written, may even remember the page or sign it was written on.

42- برای به یاد آوردن معنی کلمات، سعی می‌کنم جایی که نخستین بار آن‌ها را شنیده یا دیده‌ام به خاطر بسپارم (مثلاً این که کلمه در کجای صفحه و یا در کدام کتاب به کار رفته است).

Reliability Statistics

Cronbach's Alpha	N of Items
.870	18

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q26	50.32	109.672	.407	.867
Q27	50.54	108.155	.419	.866
Q28	50.98	104.624	.516	.862
Q29	50.29	102.812	.577	.860
Q30	50.98	103.774	.596	.859
Q31	51.27	103.151	.549	.861
Q32	50.46	104.405	.548	.861
Q33	50.71	103.462	.640	.858
Q34	50.32	105.372	.540	.862
Q35	50.56	105.952	.480	.864
Q36	50.51	106.906	.451	.865
Q37	50.61	105.694	.502	.863
Q38	50.78	103.326	.555	.861
Q39	51.24	107.889	.468	.864
Q40	51.39	104.344	.505	.863
Q41	50.71	108.412	.395	.867
Q42	50.46	112.905	.177	.875
Q43	50.49	108.506	.394	.867

Reading

46. I try to find reading material that is at or near my level.

46- فقط متونی را که در سطح زبانی من است می‌خوانم.

Reliability Statistics

Cronbach's Alpha	N of Items
.737	11

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q44	34.61	32.394	.463	.708
Q45	34.68	30.072	.523	.696
Q46	34.68	35.172	.122	.759
Q47	34.93	34.370	.306	.728
Q48	34.39	30.794	.500	.700
Q49	34.56	33.602	.374	.720
Q50	33.93	33.020	.496	.707
Q51	34.88	33.460	.254	.739
Q52	34.85	30.428	.549	.693
Q53	34.27	34.201	.323	.726
Q54	33.73	32.601	.402	.715

Speaking

64. I avoid topics I don't have language for.
68. I switch back to Persian momentarily if I know my conversation partner can't understand what I am saying.
72. When I can't think of a word or expression, I may make up new words.
73. When I can't think of a word or expression, whenever necessary I use gestures as a way of conveying my meaning.

64- از صحبت درباره‌ی موضوعاتی که نمی‌توانم به انگلیسی بیان کنم، خودداری می‌کنم.
68- در حین صحبت به زبان انگلیسی، چنانچه متوجه شوم فرد مقابل منظور من را نمی‌فهمد، به زبان فارسی صحبت می‌کنم.
72- زمانی که نتوانم کلمه یا عبارت مناسب انگلیسی را پیدا کنم، سعی می‌کنم خودم کلمه‌ی جدیدی ابداع کنم.
73- زمانی که نتوانم کلمه یا عبارت مناسب انگلیسی را پیدا کنم، در صورت لزوم، مفهوم مورد نظر را با ایما و اشاره بیان می‌کنم.

Reliability Statistics

Cronbach's Alpha	N of Items
.758	19

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q55	58.74	70.881	.297	.751
Q56	58.79	69.733	.339	.748
Q57	59.00	68.390	.357	.746
Q58	59.00	66.146	.406	.742
Q59	59.24	64.771	.472	.735
Q60	58.55	67.620	.460	.739
Q61	58.64	64.967	.610	.727
Q62	59.26	65.905	.590	.729
Q63	59.12	69.961	.336	.748
Q64	58.93	72.068	.155	.762
Q65	58.43	66.544	.560	.732
Q66	58.48	70.304	.297	.751
Q67	58.71	67.965	.422	.741
Q68	58.81	71.865	.161	.762
Q69	58.48	67.182	.409	.742
Q70	58.36	68.723	.477	.739
Q71	59.07	69.922	.280	.752
Q72	60.31	77.585	-.134	.776
Q73	59.10	77.844	-.141	.786

Writing

74. I practice writing the alphabet of English.

74- نوشتن الفبای انگلیسی را تمرین می‌کنم.

Reliability Statistics

Cronbach's Alpha	N of Items
.697	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q74	29.17	31.276	.012	.736
Q75	29.17	23.584	.592	.624
Q76	28.73	27.743	.379	.671
Q77	28.85	23.926	.472	.651
Q78	29.08	26.789	.517	.650
Q79	28.63	27.112	.419	.664
Q80	28.20	29.856	.209	.697
Q81	29.03	28.487	.335	.679
Q82	28.60	27.067	.437	.661
Q83	28.78	29.153	.247	.692

Translation

87. I try to put Persian out of my mind and think only in English.

88. I try to understand what I have heard or read without translating it word-for-word into Persian.

87- در حین استفاده از زبان انگلیسی، مستقیماً با استفاده از کلمات انگلیسی به تفکر می‌پردازم و جملات را در ذهن خود نخست از فارسی به انگلیسی ترجمه نمی‌کنم.

88- سعی می‌کنم مطلبی را که می‌خوانم یا می‌شنوم بدون ترجمه‌ی کلمه به کلمه به زبان فارسی درک کنم.

Reliability Statistics

Cronbach's Alpha	N of Items
.406	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q84	17.20	9.311	.261	.316
Q85	17.15	8.328	.368	.231
Q86	16.80	9.911	.357	.281
Q87	17.49	10.856	.033	.474
Q88	17.05	11.598	.026	.455
Q89	17.00	10.850	.182	.371

Overall

Reliability Statistics

Cronbach's Alpha	N of Items
.944	89

Items with the least correlation with the total index

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q12	291.12	1607.146	.170	.944
Q46	291.08	1615.914	.072	.945
Q64	291.12	1612.426	.103	.945
Q66	290.62	1613.686	.133	.944
Q68	290.85	1642.455	-.212	.946
Q71	291.23	1618.345	.060	.945
Q72	292.31	1627.502	-.050	.945
Q73	291.00	1624.480	-.014	.945
Q74	291.58	1632.814	-.096	.945
Q80	290.31	1623.342	.012	.944
Q81	291.27	1607.725	.201	.944
Q83	291.04	1605.478	.206	.944
Q84	290.77	1624.985	-.017	.945
Q85	290.77	1629.545	-.061	.945
Q86	290.38	1637.126	-.175	.945

12- به تکیه (استرس) کلمات و جملات توجه می‌کنم.
46- فقط متونی را که در سطح زبانی من است می‌خوانم.
64- از صحبت درباره‌ی موضوعاتی که نمی‌توانم به انگلیسی بیان کنم، خودداری می‌کنم.
66- برای بیان منظوری خاص (مثل درخواست کردن، عذرخواهی کردن، یا شکایت کردن) از کلمات و عباراتی که نشان‌دهنده زبان و فرهنگ انگلیسی است استفاده می‌کنم.
68- در حین صحبت به زبان انگلیسی، چنانچه متوجه شوم فرد مقابل منظور من را نمی‌فهمد، به زبان فارسی صحبت می‌کنم.
71- زمانی که نتوانم کلمه یا عبارت مناسب انگلیسی را پیدا کنم، از معادل فارسی آن کلمه یا عبارت استفاده می‌کنم.
72- زمانی که نتوانم کلمه یا عبارت مناسب انگلیسی را پیدا کنم، سعی می‌کنم خودم کلمه‌ی جدیدی ابداع کنم.
73- زمانی که نتوانم کلمه یا عبارت مناسب انگلیسی را پیدا کنم، در صورت لزوم، مفهوم مورد نظر را با ایما و اشاره بیان می‌کنم.
74- نوشتن الفبای انگلیسی را تمرین می‌کنم.
80- در حین نوشتن، برای پیدا کردن معنای کلمات و یا اطمینان از درستی املاي آن‌ها، از فرهنگ لغت (دیکشنری) استفاده می‌کنم.
81- تنها پس از نوشتن تمام مطالب، متن را بازخوانی و ویرایش می‌کنم.
83- پس از نوشتن نسخه‌ی اولیه، از دیگران می‌خواهم اشتباهاتم را اصلاح کنند؛ مثلاً از یک انگلیسی‌زبان (معلم یا یک دوست مسلط به زبان انگلیسی) می‌خواهم که متن را دوباره به زبان خودش بنویسد و سپس آن نوشته را با متن اصلی خودم مقایسه می‌کنم.
84- ابتدا آنچه را که می‌خواهم بگویم یا بنویسم به زبان فارسی آماده می‌کنم و سپس آن را به زبان انگلیسی ترجمه می‌کنم.
85- در حین خواندن متن انگلیسی، برای درک بهتر مطلب، ابتدا متن را به زبان فارسی ترجمه می‌کنم.
86- در حین گوش دادن، بخش‌هایی از آنچه که گفته می‌شود را در ذهن خود به فارسی ترجمه می‌کنم تا رشته کلام را از دست ندهم.

Appendix I
Function-Based Strategies
(reclassified version of the items on the LSUS)

Memory Strategies

6. I look for associations between the sound of a word or phrase in English with the sound of a familiar word.
27. I write new words in a meaningful sentence.
29. I learn a new word by listing it along with other words related to it by topic.
30. I make a mental image of new words.
31. I group words according to the part of speech (e.g., nouns, verbs, adjectives).
32. I use rhyming to remember new words.
36. I go back periodically to refresh my memory of words I learned earlier.
39. To memorize the new word, I associate the sound of the new word with the sound of a familiar word.
40. To memorize the new word, I practice the new word by acting it out.
41. To memorize the new word, I have a system for using flash cards.
43. To recall the new word, I try to remember the situation where I heard or saw the word, and if written, may even remember the page or sign it was written on.
44. To recall the new word, I visualize the spelling of the new word in my mind.

Cognitive Strategies

1. I attend out-of-class events where English is spoken.
2. I try to watch movies and TV programs in English.
3. I try to listen to the radio in English.
5. I practice all the sounds in English until I am comfortable with them.
7. I try to imitate the way native speakers talk.
17. When I listen in English, I try to understand what I have heard without translating it word-for-word into Persian.
28. I go over new words to make sure I know them.
33. I use words just learned in order to see if they work for me.
34. I use familiar words in different combinations to make new sentences.
35. I try to use idiomatic expressions in English.
37. To memorize the new word, I pay attention to the structure of it.

38. To memorize the new word, I analyze the word to identify the meaning of a part or several parts of it (e.g., the root, the prefix, or the suffix).
42. To recall the new word, I remind myself of a word meaning by first thinking of meaningful parts of the word (e.g., the prefix or the suffix).
45. I make it a point to read extensively in English.
46. I read for pleasure in English.
49. I first skim a text to get the main idea and then go back and read it more carefully.
50. I read a story or dialog several times until I can understand it.
51. I look for how the text is organized and pay attention to headings and subheadings.
52. I make ongoing summaries either in my mind or in the margins of the text.
55. When I encounter words and structures I don't understand, I use reference materials such as a dictionary or a grammar book so that I can get a detailed sense of what individual words mean.
56. In order to practice for speaking, I say new expressions repeatedly to myself.
57. In order to practice for speaking, I ask myself how a native speaker might say something and I attempt to practice saying it that way.
58. I practice new grammatical structures in different situations to check out my confidence level with the structures.
60. I initiate conversations in English.
67. I use expressions that call for both language and cultural knowledge, such as requesting, apologizing, or complaining in English.
74. I try to write different kinds of texts in English (e.g., personal notes, messages, letters, or emails).
76. I take class notes in English.
79. I use reference materials such as a dictionary to help me find or verify words in English.
83. I plan out what I want to say or write in Persian and then translate it into English.
84. I translate when reading in order to keep my train of thought and basically make the text more comprehensible to me.
85. While I am listening, I translate parts of what they have said into Persian to help store the concepts in my mind.
86. I try to put Persian out of my mind and think only in English.

87. I try to understand what I have heard or read without translating it word-for-word into Persian.

88. I am cautious about transferring words or concepts directly from Persian to English.

Compensation Strategies

9. Before I listen, I prepare myself by predicting what the other person is going to say based on what has been said so far.

23. If I don't understand some of what someone says in English, I use the speaker's tone of voice as a clue to meaning.

24. If I don't understand some of what someone says in English, I make educated guesses and inferences about the topic based on what has already been said.

25. If I don't understand some of what someone says in English, I draw on my general background knowledge in an effort to get the main idea.

26. If I don't understand some of what someone says in English, I look to the speaker's gestures and general body language as clues to meaning.

47. I try to find reading material that is at or near my level.

53. I make predictions as to what will appear next.

54. When I encounter words and structures I don't understand, I guess the approximate meaning by using clues from the surrounding context.

61. I direct the conversation to topics for which I know vocabulary.

64. I anticipate what the other person is going to say based on what has been said so far.

65. I avoid topics I don't have language for.

69. I switch back to Persian momentarily if I know my conversation partner can't understand what I am saying.

70. When I can't think of a word or expression, I ask the person I'm talking with to help me out.

71. When I can't think of a word or expression, I look for a different way to express the idea; for example, I use a synonym or describe the idea or object I want to talk about.

72. When I can't think of a word or expression, I use equivalent words from Persian.

73. When I can't think of a word or expression, whenever necessary I use gestures as a way of conveying my meaning.

78. When I can't think of the correct expression to write, I find a different way to express the idea; for example, I use a synonym or describe the idea.

Metacognitive Strategies

4. If I encounter people in public having a conversation in English, I listen in to see if I can get the gist of what they are saying.
8. Before I listen, I decide to pay special attention to specific language aspects; for example, the way the speaker pronounces certain sounds.
10. Before I listen, I prepare for a special talk I will hear in English by reading up on it beforehand.
12. When I listen in English, I listen for those keywords that seem to carry the bulk of the meaning.
13. When I listen in English, I listen for word and sentence stress.
14. When I listen in English, I pay attention to where pauses tend to come and how long they last.
15. When I listen in English, I pay attention to the rise and fall of speech by native speakers.
16. When I listen in English, I practice "skim listening" by paying attention to some parts and ignoring others.
18. When I listen in English, I pay attention to the context of what is being said.
19. When I listen in English, I listen for specific details to see whether I can understand them.

48. I plan how I am going to read a text, monitor to see how my reading is going, and then check to see how much of it I understood.
59. I seek out people with whom I can speak English.
62. I plan out in advance what I want to say.
75. I plan how I am going to write an essay and then check to see how well I wrote what I wanted to.
77. I review what I have already written before continuing to write new material in an essay.
80. I postpone editing my writing until I have gotten my ideas down.
81. After writing the first draft, I revise the essay once or twice to improve the language and content.

Social Strategies

11. When I listen in English, I try to remember unfamiliar sounds I hear, and ask a native speaker (an English teacher or a friend who knows English) later.
20. If I don't understand some of what someone says in English, I ask the speaker to repeat if the message isn't clear to me.
21. If I don't understand some of what someone says in English, I ask the speaker to slow down if I think he is speaking too fast.
22. If I don't understand some of what someone says in English, I ask for clarification if I haven't understood it the first time.
63. I ask questions as a way to be sure I am involved in conversation.
66. I look to others to correct my errors in speaking.
68. If I don't know how to perform culturally-based language expressions such as apologizing, I ask for help.
82. After writing the first draft, I look for ways to get feedback from others, such as having a native writer (an English teacher or a friend who knows English) put the text in his own words, and then I compare it to my original version.

Appendix J
Questionnaires as Used in the Study
(on the next pages)



پرسشنامه‌های
سبک‌های یادگیری زبان انگلیسی
و
راهبردهای یادگیری زبان انگلیسی

دانشجو:
فرید ناصریه

خرداد ۱۳۸۷

عنوان تحقیق:

بررسی رابطه‌ی بین سبک‌های یادگیری و
راهبردهای یادگیری زبان انگلیسی

هرکس مؤمنی را کشایشی دهد

خداوند روز قیامت دوش را کشایش می دهد
امام رضا (ع)

دوست من سلام

هدف از این تحقیق بررسی رابطه‌ی بین سبک‌های یادگیری شما و راهبردهایی (استراتژی‌هایی) است که شما در یادگیری مهارت‌های زبان انگلیسی به کار می‌برید این دفترچه حاوی دو پرسشنامه است:

۱- پرسشنامه‌ی سبک‌های یادگیری زبان: شیوه‌ی یادگیری افراد متفاوت است. برای بعضی از افراد، دیدن، بهترین و اصلی‌ترین راه دریافت و ثبت اطلاعات است: این افراد از خواندن کتاب بیشتر لذت می‌برند.

۲- پرسشنامه‌ی راهبردهای یادگیری زبان: در یادگیری زبان دوم، زبان‌آموزان با به‌کارگیری راهبردهای مختلف سعی در تسهیل در ثبت و به خاطر سپردن اطلاعات دارند. برای مثال، هنگام حفظ کردن کلمات، بعضی افراد معمولاً از کارت‌واژه استفاده می‌کنند: کلمه‌ی موردنظر را روی برگه‌ای کوچک نوشته و تعریف یا دیگر مشخصات آن را پشت برگه می‌نویسند.

□ چنانچه تمایل دارید پس از اتمام تحقیق، اطلاعات کلی و همچنین اطلاعات مربوط به سبک‌ها و راهبردهای یادگیری شما برایتان ارسال شود، لطفاً در پایان آدرس ایمیل خود را ذکر نمایید.

با عرض تشکر و سپاس،
فرید ناصریه
farid.naserich@yahoo.com

پرسشنامه‌ی سبک‌های یادگیری زبان انگلیسی

هرگز	بندرت	گاهی	معمولاً	همیشه	
۱	۲	۳	۴	۵	۱- وقتی معلم دستورالعمل فعالیتی را توضیح می‌دهد، بهتر می‌فهمم.
۱	۲	۳	۴	۵	۲- ترجیح می‌دهم با انجام فعالیت‌های عملی در کلاس مطالب را یاد بگیرم.
۱	۲	۳	۴	۵	۳- در کلاس وقتی به صورت گروهی کار می‌کنم، کار بیشتری انجام می‌دهم.
۱	۲	۳	۴	۵	۴- وقتی به صورت گروهی درس می‌خوانم، بیشتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۵- در کلاس وقتی به صورت گروهی کار می‌کنم، مطالب را بهتر از همیشه یاد می‌گیرم.
۱	۲	۳	۴	۵	۶- وقتی معلم مطلبی را روی تخته می‌نویسد و من آن را می‌خوانم، آن مطلب را بهتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۷- وقتی کسی (مثلاً معلم) به من می‌گوید که چگونه فعالیتی درسی را انجام بدهم، آن فعالیت را بهتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۸- وقتی تدریس با کار عملی همراه باشد، بهتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۹- آنچه را که در کلاس شنیده‌ام بهتر به خاطر می‌سپارم تا آنچه را که خوانده‌ام.
۱	۲	۳	۴	۵	۱۰- وقتی دستورالعمل فعالیت‌ها را می‌خوانم، آن‌ها را بهتر به خاطر می‌سپارم.
۱	۲	۳	۴	۵	۱۱- وقتی نکات آموزشی را به مدلی عملی تبدیل می‌کنم، آن‌ها را بیشتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۱۲- وقتی دستورالعمل فعالیتی را می‌خوانم، آن فعالیت را بهتر می‌فهمم.
۱	۲	۳	۴	۵	۱۳- وقتی به تنهایی مطالعه می‌کنم، مطالب را بهتر به خاطر می‌سپارم.
۱	۲	۳	۴	۵	۱۴- وقتی پروژه‌ای کلاسی را انجام می‌دهم، بیشتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۱۵- با انجام کارهای عملی در کلاس، از یادگیری لذت می‌برم.
۱	۲	۳	۴	۵	۱۶- هنگام مطالعه، وقتی مطالب را به صورت تصویری (مثلاً نمودار و جدول) منعکس می‌کنم، آنها را بهتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۱۷- وقتی معلم مطلبی را توضیح می‌دهد، بهتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۱۸- وقتی فعالیتی را به تنهایی انجام می‌دهم، بهتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۱۹- وقتی در یک مکالمه نقشی را بازی می‌کنم، مطالب را بهتر می‌فهمم.
۱	۲	۳	۴	۵	۲۰- وقتی در کلاس درس به کسی (مثلاً معلم) گوش می‌دهم، بهتر یاد می‌گیرم.
۱	۲	۳	۴	۵	۲۱- وقتی تکلیفی را با دو یا سه همکلاسی انجام می‌دهم، بیشتر از آن لذت می‌برم.
۱	۲	۳	۴	۵	۲۲- وقتی موارد کاربرد مطالب آموزشی را عملاً انجام می‌دهم، آنچه را که یاد گرفته‌ام بهتر به خاطر می‌سپارم.
۱	۲	۳	۴	۵	۲۳- ترجیح می‌دهم با دیگران درس بخوانم.
۱	۲	۳	۴	۵	۲۴- با خواندن مطالب، آن‌ها را بهتر یاد می‌گیرم تا با شنیدن آن‌ها.
۱	۲	۳	۴	۵	۲۵- از انجام پروژه‌های کلاسی لذت می‌برم.
۱	۲	۳	۴	۵	۲۶- وقتی در فعالیت‌های مرتبط با درس شرکت می‌کنم، بهتر از همیشه یاد می‌گیرم.
۱	۲	۳	۴	۵	۲۷- فعالیت‌های کلاسی را به تنهایی بهتر انجام می‌دهم.
۱	۲	۳	۴	۵	۲۸- ترجیح می‌دهم به تنهایی روی پروژه‌ها کار کنم.
۱	۲	۳	۴	۵	۲۹- با خواندن کتاب‌های درسی بیشتر یاد می‌گیرم تا اینکه به توضیحات معلم گوش دهم.
۱	۲	۳	۴	۵	۳۰- ترجیح می‌دهم به تنهایی کار کنم.

راهنمای استفاده از کلمات

همیشه	معمولاً	گاهی	به ندرت	هرگز	
۵	۴	۳	۲	۱	۲۷- کلمه‌ی جدید را داخل جمله‌ای می‌گذارم تا بتوانم آن را بهتر به خاطر بسپارم.
۵	۴	۳	۲	۱	۲۸- کلمات جدید را بارها تکرار می‌کنم تا مطمئن شوم آن‌ها را یاد گرفته‌ام.
۵	۴	۳	۲	۱	۲۹- کلمات جدید را بر اساس موضوع دسته‌بندی کرده و به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۰- کلمات جدید را با ایجاد تصویر ذهنی از آن‌ها به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۱- کلمات جدید را بر اساس نوع کلام (اسم، فعل، صفت، یا قید) دسته‌بندی کرده و به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۲- کلمات مشابه هم‌قافیه را کنار هم ردیف کرده و سپس آن‌ها را به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۳- کلماتی را که به تازگی یاد گرفته‌ام در جملات و موقعیت‌های مختلف به کار می‌برم.
۵	۴	۳	۲	۱	۳۴- کلماتی را که فرا گرفته‌ام در ترکیب‌های مختلف استفاده می‌کنم تا جمله‌های جدیدی بسازم.
۵	۴	۳	۲	۱	۳۵- سعی می‌کنم اصطلاحات زبان انگلیسی را نیز فرا گرفته و به کار ببرم.
۵	۴	۳	۲	۱	۳۶- کلماتی را که قبلاً یاد گرفته‌ام مرتباً مرور می‌کنم.

برای حفظ کردن کلمه‌ی جدید،

۵	۴	۳	۲	۱	۳۷- به اجزای آن کلمه (مانند ریشه، پسوند، یا پیشوند) توجه می‌کنم.
۵	۴	۳	۲	۱	۳۸- آن کلمه را به اجزایش (مانند ریشه، پسوند، یا پیشوند) تقسیم کرده تا معنای آن را بهتر به خاطر بسپارم.
۵	۴	۳	۲	۱	۳۹- بین تلفظ آن کلمه و تلفظ کلمات آشنا ارتباط برقرار می‌کنم.
۵	۴	۳	۲	۱	۴۰- کاری که آن کلمه بیانگر آن است را عملاً انجام می‌دهم تا بتوانم کلمه را بهتر به خاطر بسپارم.
۵	۴	۳	۲	۱	۴۱- از کارت‌واژه استفاده می‌کنم (کلمه را روی برگه‌ای کوچک نوشته و تعریف یا دیگر مشخصات آن را پشت برگه می‌نویسم).

برای به یاد آوردن معنی کلمه...

۵	۴	۳	۲	۱	۴۲- ابتدا به بخش معناداری از آن توجه می‌کنم (مثل پسوند یا پیشوند).
۵	۴	۳	۲	۱	۴۳- سعی می‌کنم جایی که نخستین بار آن را شنیده یا دیده‌ام به خاطر بسپارم (مثلاً این که کلمه در کجای صفحه و یا در کدام کتاب به کار رفته است).
۵	۴	۳	۲	۱	۴۴- املا‌ی آن را در ذهن خود مجسم می‌کنم.

راهنمای مهارت خواندن

همیشه	معمولاً	گاهی	به ندرت	هرگز	
۵	۴	۳	۲	۱	۴۵- سعی می‌کنم فرصت کافی جهت خواندن هر چه بیشتر متون انگلیسی را فراهم آورم.
۵	۴	۳	۲	۱	۴۶- متون انگلیسی را برای لذت و سرگرمی نیز می‌خوانم.
۵	۴	۳	۲	۱	۴۷- سعی می‌کنم از متونی که خواندن آن‌ها برایم خیلی مشکل نباشد، بیشتر استفاده کنم.
۵	۴	۳	۲	۱	۴۸- ابتدا برنامه‌ریزی می‌کنم که چطور متن انگلیسی را بخوانم، در حین خواندن کنترل می‌کنم درک مطلب چگونه پیش می‌رود، و پس از خواندن نیز بررسی می‌کنم که چه قدر از متن را فهمیده‌ام.
۵	۴	۳	۲	۱	۴۹- نخست متن انگلیسی را برای درک کلی آن یک بار مرور می‌کنم و سپس با دقت بیشتری آن را دوباره از ابتدا می‌خوانم.

راهنماهای استفاده از کلمات

همیشه	معمولاً	گاهی	به ندرت	هرگز	
۵	۴	۳	۲	۱	۲۷- کلمه‌ی جدید را داخل جمله‌ای می‌گذارم تا بتوانم آن را بهتر به خاطر بسپارم.
۵	۴	۳	۲	۱	۲۸- کلمات جدید را بارها تکرار می‌کنم تا مطمئن شوم آن‌ها را یاد گرفته‌ام.
۵	۴	۳	۲	۱	۲۹- کلمات جدید را بر اساس موضوع دسته‌بندی کرده و به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۰- کلمات جدید را با ایجاد تصویر ذهنی از آن‌ها به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۱- کلمات جدید را بر اساس نوع کلام (اسم، فعل، صفت، یا قید) دسته‌بندی کرده و به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۲- کلمات مشابه هم‌قافیه را کنار هم ردیف کرده و سپس آن‌ها را به خاطر می‌سپارم.
۵	۴	۳	۲	۱	۳۳- کلماتی را که به تازگی یاد گرفته‌ام در جملات و موقعیت‌های مختلف به کار می‌برم.
۵	۴	۳	۲	۱	۳۴- کلماتی را که فرا گرفته‌ام در ترکیب‌های مختلف استفاده می‌کنم تا جمله‌های جدیدی بسازم.
۵	۴	۳	۲	۱	۳۵- سعی می‌کنم اصطلاحات زبان انگلیسی را نیز فرا گرفته و به کار ببرم.
۵	۴	۳	۲	۱	۳۶- کلماتی را که قبلاً یاد گرفته‌ام مرتباً مرور می‌کنم.

برای حفظ کردن کلمه‌ی جدید،

۵	۴	۳	۲	۱	۳۷- به اجزای آن کلمه (مانند ریشه، پسوند، یا پیشوند) توجه می‌کنم.
۵	۴	۳	۲	۱	۳۸- آن کلمه را به اجزایش (مانند ریشه، پسوند، یا پیشوند) تقسیم کرده تا معنای آن را بهتر به خاطر بسپارم.
۵	۴	۳	۲	۱	۳۹- بین تلفظ آن کلمه و تلفظ کلمات آشنا ارتباط برقرار می‌کنم.
۵	۴	۳	۲	۱	۴۰- کاری که آن کلمه بیانگر آن است را عملاً انجام می‌دهم تا بتوانم کلمه را بهتر به خاطر بسپارم.
۵	۴	۳	۲	۱	۴۱- از کارت‌واژه استفاده می‌کنم (کلمه را روی برگه‌ای کوچک نوشته و تعریف یا دیگر مشخصات آن را پشت برگه می‌نویسم).

برای به یاد آوردن معنی کلمه...

۵	۴	۳	۲	۱	۴۲- ابتدا به بخش معناداری از آن توجه می‌کنم (مثل پسوند یا پیشوند).
۵	۴	۳	۲	۱	۴۳- سعی می‌کنم جایی که نخستین بار آن را شنیده یا دیده‌ام به خاطر بسپارم (مثلاً این که کلمه در کجای صفحه و یا در کدام کتاب به کار رفته است).
۵	۴	۳	۲	۱	۴۴- املاهای آن را در ذهن خود مجسم می‌کنم.

راهنماهای مهارت خواندن

همیشه	معمولاً	گاهی	به ندرت	هرگز	
۵	۴	۳	۲	۱	۴۵- سعی می‌کنم فرصت کافی جهت خواندن هر چه بیشتر متون انگلیسی را فراهم آورم.
۵	۴	۳	۲	۱	۴۶- متون انگلیسی را برای لذت و سرگرمی نیز می‌خوانم.
۵	۴	۳	۲	۱	۴۷- سعی می‌کنم از متونی که خواندن آن‌ها برابم خیلی مشکل نباشد، بیشتر استفاده کنم.
۵	۴	۳	۲	۱	۴۸- ابتدا برنامه‌ریزی می‌کنم که چطور متن انگلیسی را بخوانم، در حین خواندن کنترل می‌کنم درک مطلب چگونه پیش می‌رود، و پس از خواندن نیز بررسی می‌کنم که چه قدر از متن را فهمیده‌ام.
۵	۴	۳	۲	۱	۴۹- نخست متن انگلیسی را برای درک کلی آن یک بار مرور می‌کنم و سپس با دقت بیشتری آن را دوباره از ابتدا می‌خوانم.

راهبردهای مهارت نوشتن

همیشه	معمولاً	گاهی	بندرت	هرگز	
۵	۴	۳	۲	۱	۷۴- نوشتن انواع مختلف متن را به زبان انگلیسی تمرین می‌کنم (مانند یادداشت‌های شخصی، پیغام، نامه، و یا ایمیل).
۵	۴	۳	۲	۱	۷۵- قبل از نوشتن، مطالبی را که می‌خواهم روی کاغذ بیاورم مرور می‌کنم و در پایان نیز اشتباهات متن را اصلاح می‌کنم.
۵	۴	۳	۲	۱	۷۶- در کلاس زبان، به زبان انگلیسی یادداشت‌برداری می‌کنم.
۵	۴	۳	۲	۱	۷۷- پیش از نوشتن مطالب جدید، مطالبی را که قبلاً نوشته‌ام بازبینی می‌کنم.
۵	۴	۳	۲	۱	۷۸- در حین نوشتن، چنانچه نتوانم کلمه‌ی مناسب را پیدا کنم، از راهی دیگر آن مفهوم را بیان می‌کنم (مانند استفاده از کلمه‌ی مترادف و یا تعریف آن مفهوم).
۵	۴	۳	۲	۱	۷۹- در حین نوشتن، برای پیدا کردن معنای کلمات و یا اطمینان از درستی املاي آن‌ها، از فرهنگ لغت (دیکشنری) استفاده می‌کنم.
۵	۴	۳	۲	۱	۸۰- تنها پس از نوشتن تمام مطالب، متن را بازخوانی و ویرایش می‌کنم.
۵	۴	۳	۲	۱	۸۱- پس از نوشتن نسخه‌ی اولیه، برای اصلاح اشتباهات، متن را چندین بار بازخوانی می‌کنم.
۵	۴	۳	۲	۱	۸۲- پس از نوشتن نسخه‌ی اولیه، از دیگران می‌خواهم اشتباهاتم را اصلاح کنند؛ مثلاً از یک انگلیسی زبان (معلم یا یک دوست مسلط به زبان انگلیسی) می‌خواهم که متن را دوباره به زبان خودش بنویسد و سپس آن نوشته را با متن اصلی خودم مقایسه می‌کنم.

راهبردهای ترجمه

همیشه	معمولاً	گاهی	بندرت	هرگز	
۵	۴	۳	۲	۱	۸۳- هنگام صحبت کردن یا نوشتن به زبان انگلیسی، ابتدا مطلب را در ذهن خود به زبان فارسی آماده می‌کنم و سپس آن را به زبان انگلیسی ترجمه می‌کنم.
۵	۴	۳	۲	۱	۸۴- در حین خواندن متن انگلیسی، برای درک بهتر مطلب، ابتدا متن را در ذهن خود به زبان فارسی ترجمه می‌کنم.
۵	۴	۳	۲	۱	۸۵- در حین گوش دادن، بخش‌هایی از آنچه که گفته می‌شود را در ذهن خود به فارسی ترجمه می‌کنم تا رشته کلام را از دست ندهم.
۵	۴	۳	۲	۱	۸۶- در حین استفاده از زبان انگلیسی، سعی می‌کنم زبان فارسی را از ذهن خود دور کرده و فقط به زبان انگلیسی به تفکر پردازم.
۵	۴	۳	۲	۱	۸۷- سعی می‌کنم مطالبی را که می‌خوانم یا می‌شنوم بدون ترجمه‌ی کلمه به کلمه به زبان فارسی درک کنم.
۵	۴	۳	۲	۱	۸۸- به دلیل عدم انطباق واژه‌ها و مفاهیم زبان فارسی و زبان انگلیسی، در مورد انتقال مستقیم آن‌ها از زبان فارسی به زبان انگلیسی با احتیاط عمل می‌کنم.

جنسیت: <input type="checkbox"/> زن <input type="checkbox"/> مرد	سن: ۲۳ یا پایین‌تر <input type="checkbox"/> ۲۴-۲۷ <input type="checkbox"/> ۲۸-۳۱ <input type="checkbox"/> ۳۲-۳۵ <input type="checkbox"/> ۳۶ یا بالاتر <input type="checkbox"/>
دانشکده: حقوق <input type="checkbox"/> علوم <input type="checkbox"/> علوم تربیتی و روانشناسی <input type="checkbox"/> مدیریت و حسابداری <input type="checkbox"/> معماری و شهرسازی <input type="checkbox"/> مهندسی هسته‌ای <input type="checkbox"/>	
رشته و گرایش تحصیلی: _____	سطح انگلیسی خود را چگونه ارزیابی می‌کنید؟ خیلی ضعیف <input type="checkbox"/> ضعیف <input type="checkbox"/> متوسط <input type="checkbox"/> نسبتاً خوب <input type="checkbox"/> خوب <input type="checkbox"/> عالی <input type="checkbox"/>
آدرس ایمیل (چنانچه مایل به دریافت اطلاعات در مورد سبک‌ها و راهبردهای یادگیری خود هستید): _____@_____	

Appendix K
Descriptive Statistics of the Items on the PLSPQ

Item	<i>M</i>	<i>SD</i>
1. When the teacher tells me the instructions I understand better.	3.97	0.73
2. I prefer to learn by doing something in class.	3.76	1.03
3. I get more work done when I work with others.	3.54	1.02
4. I learn more when I study with a group.	2.97	1.07
5. In class, I learn best when I work with others.	3.38	1.00
6. I learn better by reading what the teacher writes on the chalkboard.	3.77	0.79
7. When someone tells me how to do something in class, I learn it better.	3.51	0.87
8. When I do things in class, I learn better.	4.12	0.71
9. I remember things I have heard in class better than things I have read.	3.54	0.98
10. When I read instructions, I remember them better.	3.59	0.75
11. I learn more when I can make a model of something.	3.99	0.74
12. I understand better when I read instructions.	3.80	0.70
13. When I study alone, I remember things better.	3.86	0.86
14. I learn more when I make something for a class project.	3.93	0.85
15. I enjoy learning in class by doing experiments.	3.76	0.94
16. I learn better when I make drawings as I study.	4.01	0.77
17. I learn better in class when the teacher gives a lecture.	3.90	0.71
18. When I work alone, I learn better.	3.49	0.89
19. I understand things better in class when I participate in role-playing.	3.75	0.88
20. I learn better in class when I listen to someone.	3.70	0.75
21. I enjoy working on an assignment with two or three classmates.	3.25	0.93
22. When I build something, I remember what I have learned better.	4.01	0.80
23. I prefer to study with others.	2.77	1.10

Item	<i>M</i>	<i>SD</i>
24. I learn better by reading than by listening to someone.	3.60	0.86
25. I enjoy making something for a class project.	3.37	0.92
26. I learn best in class when I can participate in related activities.	3.80	0.79
27. In class, I work better when I work alone.	3.32	0.94
28. I prefer working on projects by myself.	3.28	0.95
29. I learn more by reading textbooks than by listening to lectures.	3.28	0.99
30. I prefer to work by myself.	3.22	1.03

Appendix L
Descriptive Statistics of the Items on the LSUS

Item (abbreviated)	<i>M</i>	<i>SD</i>
1. Attending out-of-class events in English	3.20	0.96
2. Watching movies and programs in English	3.33	1.00
3. Listening to the radio in English	2.35	0.99
4. Paying attention to someone speaking English	3.59	0.88
5. Practicing the sounds of English	3.17	1.01
6. Thinking of relationships between the sounds of a new word and a familiar one	3.17	1.00
7. Trying to talk like native speakers	3.38	1.10
8. Planning to attend to specific language aspects before listening	3.24	0.98
9. Trying to predict what the speaker will say before listening	3.20	1.02
10. Getting prepared before listening by reading about the material	2.91	0.99
11. Remembering the unfamiliar sounds and asking about them later (while listening)	2.59	1.02
12. Paying attention to keywords (while listening)	3.72	0.75
13. Paying attention to words and sentences stress (while listening)	3.19	0.99
14. Paying attention to the speaker's pauses (while listening)	3.01	1.06
15. Paying attention to the rise and fall of speech (while listening)	3.21	1.01
16. Practicing skim listening (listening for important points) (while listening)	3.22	0.81
17. Trying not to translate word for word (while listening)	3.33	1.08
18. Paying attention to the (situational) context (while listening)	3.44	0.85
19. Practicing scan listening (listening for specific details) (while listening)	3.04	0.92
20. Asking for repetition if I don't understand what someone says	3.56	0.94
21. Asking the speaker to slow down if I don't understand what he says	3.56	0.92
22. Asking for clarification if I don't understand what someone says	3.58	0.83
23. Paying attention to the speaker's tone of voice if I don't understand what he says	3.22	0.92

Item (abbreviated)	<i>M</i>	<i>SD</i>
24. Making inferences and guesses if I don't understand what someone says	3.35	0.89
25. Using prior knowledge if I don't understand what someone says	3.75	0.76
26. Looking to the speaker's gestures and body language if I don't understand what he says	3.51	0.90
27. Placing the new word in a meaningful sentence	3.09	0.97
28. Saying or writing new words several times	3.48	0.91
29. Grouping new words based on topic	2.99	0.97
30. Making mental images in order to remember new words	3.51	0.95
31. Grouping new words based on part of speech	2.77	1.03
32. Using rhymes in order to remember new words	2.86	1.08
33. Using the words I know in different sentences and contexts	3.18	0.93
34. Using the words I know in different combinations	3.04	0.97
35. Trying to learn idiomatic expressions	3.37	0.89
36. Reviewing the words I have learned before	3.26	0.90
37. Paying attention to the structure of the new words in order to memorize them	3.22	1.05
38. Dividing the new words into parts I understand in order to memorize them	3.09	1.06
39. Associating the sound of new words with the familiar ones in order to memorize them	3.21	0.89
40. Physically acting out new words in order to memorize them	2.54	1.08
41. Using flash cards in order to memorize new words	2.66	1.20
42. Thinking of the meaningful parts of the word in order to recall the meaning	3.09	1.02
43. Using location of the word in order to recall the meaning	3.07	0.96
44. Visualizing the spelling of the word in order to recall the meaning	3.50	0.94
45. Looking for opportunities to read in English	3.36	0.91
46. Reading for pleasure in English	3.09	1.00
47. Reading materials at my level more	3.46	0.85
48. Planning, monitoring, and evaluating the reading process	3.23	0.95
49. Skim reading before reading carefully	3.35	1.02

Item (abbreviated)	<i>M</i>	<i>SD</i>
50. Reading the material several times to understand better	3.36	0.90
51. Paying attention to the text organization (e.g., headings and subheadings)	3.79	0.80
52. Making ongoing summaries	3.12	1.10
53. Predicting what will come next	2.92	0.97
54. Guessing the approximate meaning of unfamiliar words using contextual clues	3.52	0.92
55. Using a dictionary to find the meaning of unfamiliar words	3.96	1.06
56. Practicing saying new words and expressions several times	3.11	0.94
57. Practicing expressing ideas in the same way a native speaker does	2.93	1.00
58. Practicing using new grammatical structures in different situations	2.92	0.93
59. Seeking out people I can talk to in English	2.96	1.01
60. Trying to start conversations in English	2.70	1.08
61. Trying to talk about topics for which I know the vocabulary	3.33	0.93
62. Planning out what to say in advance	3.51	0.91
63. Asking questions as a way of showing involvement in the conversation	2.95	0.92
64. Predicting what the speaker will say next	2.91	0.86
65. Avoiding talking about topics for which I don't have the language	3.35	1.07
66. Asking for correction when I am talking	3.46	1.00
67. Practice using culturally-based language expressions (e.g., apology and request)	3.22	0.99
68. Asking for help in using culturally-based language expressions	3.14	0.98
69. Switching back to Persian if the listener can't understand	3.17	1.06
70. Asking for help from the other person when I can't think of a word	3.35	0.89
71. Using other ways to convey meaning (e.g., synonyms) when I can't think of a word	3.51	0.82
72. Using the Persian equivalent when I can't think of a word	2.98	0.96
73. Using gestures (and body language) when I can't think of a word	3.14	0.96
74. Writing notes, letters, memos, and emails in English	2.85	1.04
75. Planning out and checking the writing process	3.38	0.98

Item (abbreviated)	<i>M</i>	<i>SD</i>
76. Taking class notes in English	3.11	1.19
77. Reviewing what I have already written before writing new materials	3.04	0.89
78. Finding other ways to express the word I can't think of (e.g., using synonyms)	3.49	0.87
79. Using a dictionary to find or verify the meaning or spelling of a word	3.88	0.88
80. Editing the writing only after writing the whole essay	3.18	0.93
81. Checking and revising the essay several times after writing the first draft	3.45	0.88
82. Trying to get others' feedback on my writing	2.95	1.02
83. Mentally planning out what to say/write in Persian and then translating it into English	3.24	1.06
84. Mentally translating what I am reading into Persian to understand better	3.16	1.05
85. Mentally translating parts of what I am listening to so as to keep my train of thought	3.28	1.09
86. Trying to think only in English and put Persian out of my mind	2.96	1.12
87. Trying to understand what I am reading/listening to without translating it word for word	3.42	1.00
88. Exercising caution in transferring words directly from Persian to English	3.41	0.93