

EFL Learners' Self-Perceived Strategy Use across Various Intelligence Types: A Case Study

Abdorreza Tahriri* and Hoda Divsar

University of Guilan and Payame Noor University

Tahriri, A., & Divsar, H. (2011). EFL Learners' self-perceived strategy use across various intelligence types: A case study. *Journal of Pan-Pacific Association of Applied Linguistics*, 15(1), 115-138.

Increasing attention paid to learner-centered pedagogy in recent years has highlighted the examination of intelligence and language learning strategies (LLSs) among others. This study explores EFL learners' perceived use of language learning strategies across various intelligence types as reflected in Gardner's 1983 Multiple Intelligences Theory.

Ninety BA Junior English majors studying at Islamic Azad University of Rasht participated in the present study. Two self-reported inventories, Multiple Intelligences Survey (Armstrong, 1993) and Strategy Inventory for Language Learning (SILL) (ESL/EFL Version) developed by Oxford (1990), were utilized to determine the participants' intelligence profile and their perceived strategy use.

The findings of the study revealed that intelligence did not significantly affect the overall strategy use of the participants. All types of intelligence fell within the 'medium' user of LLSs. However, participants of verbal linguistic type were found to be higher in terms of their strategy use and visual-spatial students were the lowest strategy users overall. In addition, participants of verbal-linguistic type were found to be higher users of cognitive strategies. In terms of metacognitive strategies, verbal-linguistic, bodily-kinesthetic, interpersonal, intrapersonal and naturalist were found to be higher than logical-mathematical, visual-spatial and musical-rhythmic types. Visual-spatial learners were also found to be lower in terms of their use of social strategies. The conclusions of the study along with related pedagogical implications are explained.

Key Words: Language Learning Strategies, Multiple Intelligences, EFL, Case Study

1 Introduction

'Good language learner' studies in the 1970s gave birth to a learner-centered pedagogy in language instruction. Since then learner variables have received increasing attention in language studies. One major variable that has seized the attention of scholars in recent years is intelligence type. The growing corpus of literature in the area of multiple intelligences continues to capture

* First/corresponding author: Abdorreza Tahriri; Second author: Hoda Divsar

Abdorrezza Tahriri and Hoda Divsar

attention, there is as yet little solid knowledge concerning the interrelationship of intelligence profile and strategy use. Language learning strategies (LLSs) are another group of variables the effects and role of which have been the focus of many studies to date. A lingering question is whether or not strategy use conforms closely to one's intelligence type and if so, it is to be explored if intelligence type can be considered as a surrogate for learning strategies employed by EFL learners.

1.1 Multiple intelligences

Beginning in the 1980s, studies on the MI theory gained momentum based on the works of American psychologist Howard Gardner (1983). Gardner's (1983) MI theory has seized many educators ever since it has been proposed. Viewed from MI lens, more learners succeed as different pathways are offered to them. This theory is a learner-based philosophy which has far-reaching implications in education in general and in language instruction in particular. The theory has proved influential in the field of psychology and its profound influence has been the focus of attention in language pedagogy in recent years. In essence, the MI theory challenges the traditional notion of intelligence as a unitary concept and proposes the existence of at least eight intelligence types. Gardner (2003) enumerates these intelligences as verbal/linguistic, logical/mathematical, visual/spatial, bodily/kinesthetic, musical/rhythmic, interpersonal, intrapersonal and naturalist. These various intelligence types "reflect a pluralistic panorama of learners' individual differences; they are understood as *personal tools* each individual possesses to make sense out of new information and to store it in such a way that it can be easily retrieved when needed for use" (Arnold & Fonseca, 2004, p. 120). What the MI theory offers is not only significant from a theoretical perspective, but also it has something quite worthwhile to offer to teaching practice. What is of concern to instructors is to take into account the diversity of intelligence types of language learners and try to release and empower their students to use various intelligences in their learning (Gen, 2000). In order to maximize the quality of instruction, instructors are recommended to take these different intelligences into consideration in their career (Larsen-Freeman, 2000). As teachers, we should give recognition to diversity among learners and address it properly. In other words, learners' multidimensionality should not be ignored. Otherwise, their all cognitive capacities cannot be developed (Cohen, 2003).

Gardner (2005) argued that all people have various intelligence types and that is what makes them human beings. However, they do not have the same profile of intelligences. In other words, people differ in terms of their strengths and capabilities. No particular intelligence type is considered to be superior to other types. However, all intelligence types are needed when one is to function productively in society. There is controversy over the number

EFL Learners' Self-Perceived Strategy Use

of intelligence types. Yet, it is not clear how many intelligence types might exist. These eight types – to be investigated in the present study – are the ones upon which many scholars agree (Armstrong, 1993; Gardner, 2005).

1.2 Language learning strategies (LLSs)

Burgeoning attention paid to learning strategies and the factors that influence their use in recent years is the result of the view that regards learning as a process and the role of the teacher as the facilitator of that process. Later contributions of scholars such as Oxford (1990) and O'Malley and Chamot (1990) resulted in the explosion of interest in learning strategies over the last three decades.

Oxford (1990) defined LLSs as “operations employed by the learner to aid the acquisition, storage, retrieval, and use of information” (p. 8). O'Malley and Chamot (1990) also defined them as skills that are acquired as declarative knowledge, which would subsequently become procedural as a result of extensive practice. O'Malley & Chamot (1990) classified LLSs into three types: *metacognitive* (knowing about learning and controlling learning through planning, monitoring and evaluating learning activity), *cognitive* (manipulation or transformation of the material to be learned) and *social/affective* (involving the learner in communicative interaction with another person, for example, collaboration with peers and teachers in the learning process). Oxford (1990) divided the LLSs into two broad categories of direct and indirect dichotomy. Direct learning strategies consist of cognitive, memory and compensation strategies whereas indirect strategies include metacognitive, social and affective ones.

There is now a paucity of research examining EFL learners' preferred strategy use and their intelligence type. The present study was an attempt to explore EFL learners' perceived use of LLSs across various intelligence types. A pertinent factor relates to the role of context as a potentially determining factor the role of which should be taken into consideration.

1.3 Statement of the problem

A major problem in EFL classes is that learners' individual differences are not usually taken into consideration in language instruction. In the Iranian EFL context in particular, various capabilities and preferences of learners are not duly taken into account. Chastain (1988) believes that this is in part due to the misconception that since they are learning a foreign language together, they have much in common hence learner characteristics are mostly neglected.

Having a better understanding of the role of LLSs and intelligence types help shed further light on the role of learner variables. In fact, the role of context is usually ignored in many relevant studies and the findings are

Abdorrezza Tahriri and Hoda Divsar

overgeneralized to other contexts to make universal claims. This study sought to investigate the role of LLSs and its relationship to English majors' intelligence type in Iran as an EFL context.

1.4 Significance of the study

Investigating the use of LLSs and intelligence type of EFL learners will allow us to make more informed decisions concerning how they should be dealt with in language classes. In fact, a preliminary step in any educational planning is gaining accurate information with regard to the present situation. Such studies will make the planning stage more flexible to incorporate the learners' characteristics into consideration prior to the implementation stage.

There is currently a paucity of research concerning the role of LLSs and intelligence type in various contexts. The majority of studies conducted so far are limited to ESL context. In fact, the results obtained from studies in ESL context might not be necessarily similar to those conducted in EFL ones. There is a need to increase our understanding of how the perceived use of LLSs is related to one's intelligence type in an EFL context. As such, we will be able to tailor our strategy instruction to various learners in order to enhance the quality and effectiveness of instruction.

1.5 Objectives of the study

The major objective of the study was to shed light on the role of LLSs and its relationship to intelligence type in Islamic Azad University of Rasht. In other words, the study aimed at determining how students at Islamic Azad University of Rasht as a specific setting where the study was carried out employ LLSs and how it relates to their intelligence types based on Gardner's MI theory.

1.6 Research questions

The present study was driven by three research questions:

1. What is the perceived use of LLSs by junior English majors at Islamic Azad University of Rasht?
2. What are the LLSs most frequently used by junior English majors at Islamic Azad University of Rasht?
3. Does type of intelligence discriminate the type of language learning strategies used by junior EFL learners at Islamic Azad University of Rasht?

EFL Learners' Self-Perceived Strategy Use

1.7 Theoretical framework

Understanding the theoretical foundations of the study allows us to make more well-grounded decisions regarding the research design. In what follows the theoretical basis of the present study is explained.

In 1983, Gardner expanded the traditional concept of intelligence and maintained that intelligence is not a unitary construct. He recognized seven distinct intelligences and in 1999 he added an eighth type to them: 1) logical/mathematical; 2) visual/spatial; 3) body/ kinesthetic; 4) musical/rhythmic; 5) interpersonal; 6) intrapersonal; 7) verbal/ linguistic and 8) the naturalist. However, Gardner's (1983) definition of intelligence gives much credit to the role of cultural and biological aspects. Later he expanded his definition of intelligence and reformulated his 1983 definition of MI. For him, intelligence is now "a biopsychological information-processing capacity" (Gardner, 2005, p. 6). Gardner and Hatch (1989) put it as the capacity to solve problems or to fashion products that are valued in one or more cultural settings. As Propper (2000) clarifies, intelligence is in fact a potential to process information which is culture-dependent (cited in Mbuva, 2003). This revised definition expands the earlier one and depicts a more vivid picture of intelligence from Gardner's view.

The new perspective on intelligence is thoroughly different from the traditional perspective which recognizes just two types, namely, verbal and computational intelligences. Gardner (1999) proposed eight criteria which have been used in MIT to identify intelligence types:

1. Potential isolation by brain damage
2. Existence in prodigies, savants & other exceptional beings
3. Identifiable core operations or set of operations
4. Distinctive developmental history within an individual along with a definable nature of expert performance
5. An evolutionary history and evolutionary plausibility
6. Support from tests in experimental psychology
7. Support from psychometric findings
8. Susceptibility to encoding in a symbol system

Gardner, for example, examined spiritual intelligence as a candidate, but he ended up rejecting it on the grounds that it did not meet the above-mentioned criteria. However, there is controversy over the number of intelligence types and there is not a consensus over the criteria proposed by Gardner. Existential intelligence has been another possible candidate which does not seem to meet all eight criteria. Arnold and Fonseca (2004) referred to so-called existential intelligence as "less amenable to development in the

Abdorrezza Tahriri and Hoda Divsar

classroom” (p. 131). However, any decisions concerning the inclusion of a possible candidate should depend on the examination of verifiable data.

Ellis (1994) defined strategy as “mental or behavioral activity related to some specific stage in the overall process of language acquisition or language use” (p. 529). Strategy has a dual interpretation in the literature. Weinstein and Mayer (1986) stated that strategies could be perceived of as *behavioral* as stated by Oxford (1990), as *mental*, or both. In the former case, it is *observable*, and the latter case reveals that it is *difficult to be observed*.

LLSs have been analyzed in different ways. For example, Rubin (1975) and Stern (1975) used observation to analyze the strategies. O'Malley and Chamot (1990) utilized first language categories while Oxford's (1990) classification of LLSs is a multi-source one which draws on various factors. Chamot and El-Dinary (1999) and Chamot et al. (1996) also employed think-aloud protocol to analyze learning strategies.

2 Literature Review

In what follows first the major studies related to the MI theory and individual differences are reviewed chronologically. Next, the key studies on LLSs are reviewed briefly.

2.1 Studies on the MI theory

Numerous studies have been conducted to investigate the perceptions of language learners concerning their intelligence type. For example, Chan (2001) conducted a study to “assess the variability of the use of a self-report checklist identifying aspects of giftedness in a sample of 192 Chinese secondary students from a multiple intelligences perspective” (p. 215). It was found that participants perceived the seven intelligences almost as distinct abilities. However, “the self-estimates of the various intelligences did not generally predict the conventional measures, suggesting that the seven intelligences and the conventional measures provided independent and possibly complementary information on aspects of giftedness” (p. 251). Chan also discussed the significance of developing profiles of strengths and weaknesses from an MI perspective for programming and identification purposes.

In a study by Furnham, Shahidi and Baluch (2002), 212 British and 154 Iranian college students estimated their own, their parents', and their siblings' MI scores. Men tended to rate their IQ higher than women and were of the opinion that their parents' intelligence was lower than their own intelligence. Iranian college students "were less skeptical and more conservative about intelligence and IQ tests. They generally gave higher self-estimates for overall and multiple intelligences than did British students" (Abstract section).

EFL Learners' Self-Perceived Strategy Use

Chan (2003) assessed MI in a group of Chinese secondary school teachers in Hong Kong. The consistency between the teachers' areas of responsibilities and their multiple intelligences was explored. As for teachers relative strengths in interpersonal and intrapersonal intelligences and weaknesses in visual-spatial and bodily-kinesthetic intelligences were generally reported. When age was held constant, arts/music/sports teachers reported to have greater strengths in musical intelligence compared with language and social studies teachers, and guidance teachers were also found to have greater strengths in intrapersonal and interpersonal intelligence. Utilizing the eight intelligences as predictors, interpersonal intelligence was found to be a significant predictor of the teachers' self-efficacy in helping other individuals.

Stanford (2003) stated that the MI theory "opens the door to a wide variety of teaching strategies that can easily be implemented in the classroom.... MI theory suggests that no one set of strategies will work best for all students at all times" (p. 82). She also emphasized that the MI classroom provides teachers with an environment in which they can utilize "varied teaching strategies, expanded curricula, and authentic assessment to provide creative and active learning that engages all students (especially those with disabilities) in the construction of their own learning" (p. 84).

In a study by Acat (2005), the post-test pattern of experimental study without a control group was used. All 180 students applying for a Certificate of Teaching in Turkey were included in the survey. The results of this study were obtained through content analysis of data. "From the teachers' perceptions, it can be concluded that MIT makes important contributions to class control and efficiency of the lessons. Through MIT, an individual's active participation and showing his or her abilities provides a more effective assessment" (p. 54).

In a study in Argentina by Furnham and Chamorro-Premuzic (2005), 217 participants estimated their own, their partner's, their parents and their grandparents' overall and multiple intelligences. The findings showed that men's overall estimates were higher than those of women as well as higher estimates on spatial and mathematical intelligence. The Argentinean participants "thought themselves slightly less bright than their fathers (2 IQ points) but brighter than their mothers (6 points), their grandfathers (8 points), but especially their grandmothers (11 points)" (p. 12). Based on regression analysis, it was found that participants considered verbal and mathematical IQ as the best predictors of overall IQ. Results were found to be in general agreement with other studies. The researchers also made a comparison between the findings of their study with British data using the same questionnaire. "British participants tended to give significantly higher self-estimates than for relatives, though the pattern was generally similar" (p. 12).

In a study by Loori (2005), the differences in intelligence preferences of ESL male and female students were examined. Ninety

Abdorrezza Tahriri and Hoda Divsar

international students at three American universities took part in this study. The results showed significant differences between males' and females' preferences of intelligences. It was found that "males preferred learning activities involving logical and mathematical intelligences, whereas females preferred learning activities involving intrapersonal intelligence" (p. 77).

Concerning the role of *individual differences*, the study conducted by Snyder (2000) can be referred to. He sought to determine the relationship between learning styles and academic achievement of high school students. The results of the study suggested that the majority of high school students were Tactile/Kinesthetic and Global learners. It was concluded that an awareness of how students learn is in fact indispensable to successful classroom.

As for the materials preparation, Rule and Lord (2003) edited an activity book containing 13 curriculum units which are designed to help learners who need special help including gifted students with enhanced instruction. To this end, Bloom's level of cognitive understanding and Gardner's MI theory were utilized to provide a framework for individualized instruction. Bloom's taxonomic levels and Gardner's eight multiple intelligences are the basis of the activities.

Concerning the assessment procedures, McMahon et al. (2004) sought to evaluate the reliability of an instrument designed to assess MI, namely, the Teele Inventory of Multiple Intelligences (TIMI). They also sought to determine the relationship between intellectual preferences and reading achievement. The TIMI subscales were found to be poor to moderate in terms of reliability. Those students who scored higher on logical-mathematical intelligence were found to be more likely to "demonstrate at or above grade-level reading comprehension scores compared with students who scored lower on logical-mathematical intelligence, but none on the other MI scales was predictive of student achievement" (p. 41).

To sum up, literature on multiple intelligences reveals the significance of a multidimensional style of education and pinpoints a number of ever-neglected key considerations in the area of language teaching. As Hall Haley (2004) rightly points out, a review of the literature indicates the paucity of research concerning the of MI theory in EFL contexts.

2.2 Studies on LLSs

Numerous studies have shown the significance of LLSs in making language learning more efficient (Wenden & Rubin, 1987; O'Malley & Chamot, 1990; Cohen, 1998 among others).

Mochizuki (1999) carried out a study in a state-run university in central Japan. The objectives of the study were to determine the type of strategies that Japanese university students use and the factors that influence their choice of strategies. The participants of the study were 44 second-year

EFL Learners' Self-Perceived Strategy Use

students and 113 first-year students in 1996. The findings of the study revealed that Japanese university students use compensation strategies most often. Affective strategies were found to be the least frequently used ones. Most proficient students used cognitive and metacognitive strategies more frequently than less proficient ones. It was also found that choice of strategies was influenced by factors such as major, motivation and gender of the participants.

Riazi and Rahimi (2005) investigated Iranian EFL learners' perceived use of LLSs overall based on Oxford's (1990) classification which consists of the six strategy categories (memory, cognitive, compensation, metacognitive, affective, and social). Two hundred and twenty female and male English major university students took part in this study. The results of the study revealed that Iranian EFL learners were medium strategy users overall. However, metacognitive strategies were used with a high frequency. For cognitive, compensation, and affective strategies, a medium frequency was reported and memory and social strategies were found to be of low frequency.

Hong-Nam and Leavell (2006) investigated the LLS use of 55 ESL students who enrolled in a college Intensive English Program (IEP). The relationship between LLS use and second language proficiency was also examined in this study with a focus on differences in strategy use across gender and nationality. The IEP is in fact "a language learning institute for pre-admissions university ESL students, and is an important step in developing not only students' basic Interpersonal Communications Skills (BICS), but more importantly their Cognitive Academic Language Proficiency (CALP)" (p. 399). The participants had differing cultural and linguistic backgrounds. Oxford's (1990) Strategy Inventory for Language Learning (SILL) was utilized to collect the data. A curvilinear relationship between strategy use and English proficiency was found. It was revealed that students in the intermediate level used learning strategies more than beginning and advanced levels. More strategic learners were found to advance along the proficiency continuum faster than less strategic language learners. The students were found to prefer using metacognitive strategies most whereas the use of affective and memory strategies were found to be the least. As for the gender differences, females preferred to employ affective and social strategies more frequently than their male counterparts.

Lau (2006) sought to investigate the differences between Chinese good and poor readers concerning their strategy use. The participants of the study were eight grade 7 students in Hong Kong, four good readers and four poor readers. A think-aloud protocol was utilized in this study. The participants received a think-aloud task and an interview. The findings revealed that Chinese good readers utilized more strategies and had better ability and awareness of strategy use than did poor readers participating in this study. The poor readers were found to have poorer intrinsic motivation than the good readers in addition to the cognitive deficiencies. They were

Abdorreza Tahriri and Hoda Divsar

unwilling to process the text at a deeper level due to the combined problems of poor reading ability and motivation and they simply gave up when they encountered reading difficulties.

Riazi (2007) examined the patterns of language learning strategy use among 120 female Arabic-speaking students who were majoring in English at a university in Qatar. To tap the perceived strategy use, the SILL (ESL/EFL Student Version) was utilized. The findings of the study revealed that Arab EFL learners tended to be medium strategy users bordering on high strategy users. Strategy categories were reported in the order of metacognitive, cognitive, compensation, social, memory and affective respectively. In addition, it was found that freshmen students were the highest rate of strategy users. Except for compensation strategies, no significant difference was found among four educational levels with regard to the use of strategy categories.

Jinag and Smith (2009) indicated that a better understanding of Chinese learners' strategy use could be obtained through accessing their own voices, and by analyzing the findings with respect to historical context. This study was an interview-based one which examined the strategy use of 13 English language learners from three generations of learning experience. The analysis of the findings confirmed that memorization could be considered as a popular learning strategy for these learners. However, the application of this learning strategy was argued to be complex and diverse "while change as well as continuity emerges from an overall comparison of different generations' learning strategy use" (p. 286). The researchers argued that language policy and related pedagogy may exert significant influences.

Lai (2009) examined LLSs used by 418 EFL learners in Taiwan to determine the relationships between LLS use and the patterns of strategy use based on language proficiency. The participants of the study reported using compensation strategies most frequently and affective strategies were the least frequent strategies. The most frequently used individual strategies consisted of guessing intelligently and overcoming limitations in using English. The least used individual items were speaking and writing to others. The results also showed that proficiency level has a significant effect on strategy choice and use. The more proficient learners utilized more LLSs. Metacognitive strategies and cognitive strategies were used most frequently and memory strategies least frequently by the more proficient learners. On the other hand, the less proficient learners preferred social and memory strategies to cognitive and metacognitive strategies. It was also found that the more frequently strategies used by the more proficient learners were arranging and planning one's learning, using analytical and reasoning skills and practicing one's pronunciation and speaking.

A study by Yu and Wang (2009) was concerned with the LLS use of Chinese EFL secondary school students in Northeast China from the perspective of socio-cultural theory. Quantitative and qualitative methods

EFL Learners' Self-Perceived Strategy Use

were both utilized in this research. The results revealed that Chinese secondary school EFL learners utilize memory and cognitive strategies more than other types of strategies. Semi-structured interviews also showed that Chinese EFL learner strategy use was greatly influenced by the learning context, classroom practice and assessment. The researchers argue that the classroom practice currently in use in China and assessment methods do not help the EFL learners develop communicative competence and autonomous learning. It is also strongly recommended that teaching be communication-oriented and student-centered in the implementation of the new English pedagogy in China.

Tsai et al. (2010) conducted a study to determine the relationship between L1 (Mandarin Chinese) and L2 (English) strategy use in L2 reading comprehension with a focus on the correlation of L1 reading ability, L2 proficiency and reading strategies. The participants of the study were 222 EFL undergraduates. They were grouped into skilled and less-skilled groups. Almost no difference of strategy use was confirmed between skilled and less-skilled readers in reading L1 material. However, in L2 that skilled readers use more strategies is confirmed within to improve their comprehension than less-skilled readers.

To sum up, several studies point to the importance of LLSs in language instruction (Zhang & Goh, 2006; Jinag & Smith, 2009). In the EFL contexts, language learners were mostly found to be medium strategy users and sometimes bordering on high strategy users (Riazi & Rahimi, 2005; Riazi, 2007).

3 Method

In what follows, the participants of the study, the instruments used to collect the data and the data collection and analysis procedures are detailed.

3.1 Participants

Ninety BA junior students took part in the present study during. They were majoring in Teaching English and were studying at Islamic Azad University of Rasht. The mean age of the participating EFL learners was found to be 22.3. In terms of their gender, there were 26 males and 64 females in this study. Because of the limited number of the male participants, it was not possible to consider gender as a moderator variable in the present study.

3.2 Instruments

Two instruments were used in the present study: Oxford's (1990) Strategy Inventory for Language Learning (SILL) and Armstrong's (1993) MI

Abdorrezza Tahriri and Hoda Divsar

Checklist. Each of these instruments along with their reliability and validity issues will be explained in turn.

3.2.1 The MI checklist

In order to identify the intelligence type of the participants, the Multiple Intelligences Survey (Armstrong, 1993) was utilized (see Appendix A). The checklist consists of eight sections representing the eight types of intelligence based on Gardner's (1993) classification of intelligence types. The checklist was translated into Persian by the present researcher to ensure the participants' understanding of the items. The reliability of the translation was ensured through back translation by two experienced university instructors.

The MI checklist has been widely used in numerous studies dealing with multiple intelligences theory (see, e.g., Furnham, Shahidi & Baluch, 2002; Chan, 2003; Acat, 2005; Loori, 2005; Hall Haley, 2001). Han (2006) also found that the MI inventory has effective reliability and validity. In terms of reliability, Cronbach alpha coefficient of the overall MI inventory was found to be .97 in Han's study. The inventory was also reported to have effective validity based on the criterion correlation coefficient between students' academic scores in school and the intelligences. In the present study, Cronbach alpha coefficient of the whole inventory was found to be satisfactory (.81).

3.2.2 Strategy inventory for language learning (SILL)

A self-reported inventory, Strategy Inventory for Language Learning (SILL) (ESL/EFL Version) developed by Oxford (1990), was also used to determine the participants' perceived strategy use (see Appendix B). The inventory was translated into Persian by the present researcher and its reliability was confirmed through back translation. The translated inventory was administered to the participants to ensure their comprehension of the items. SILL is a 50-question, self-rating survey for EFL learners. It examines the frequency of the strategy usage for L2 learning. SILL has six sections including memory, cognitive, compensation, metacognitive, affective and social each of which aims at measuring one strategy type in particular. The scoring procedure of the inventory is given in the following table:

Table 1 Key to Scoring the SILL

High	<i>Always or almost always used.</i>	4.5 to 5.0
	<i>Usually used.</i>	3.5 to 4.4
Medium	<i>Sometimes used.</i>	2.5 to 3.4
	<i>Generally not used.</i>	1.5 to 2.4
Low	<i>Never or almost never used.</i>	1.0 to 1.4

EFL Learners' Self-Perceived Strategy Use

According to Ellis (1994), Oxford's taxonomy of LLSs is the most comprehensive classification. The SILL has undergone significant revisions and has been translated into numerous languages, with multiple reliability and validity checks performed (Oxford & Burry-Stock, 1995).

To ensure the reliability of the questionnaire, the present researcher ran Alpha Cronbach reliability analysis through SPSS 17.0. The reliability coefficient was found to be .78 which is indicative of the relatively high reliability of the questionnaire.

3.3 Data collection and data analysis procedures

The checklists were given to the participants in their class hour. They were first briefed about the purpose of the study and their anonymity was also guaranteed. The collected data were subjected to descriptive statistics based on Oxford's (1990) rating for LLSs. The participants' performances on the inventories were coded and analyzed for the pattern of strategy use among the participating EFL learners. Based on the MI survey, the reported strategy use was divided into eight categories and for each group the strategy use was determined.

4 Findings

To determine the participants' perceived strategy use, Oxford's (1990) rating scheme was utilized. Table 2 summarizes the statistics of the participants' responses to the SILL items across eight intelligence types.

Table 2 Overall Strategy Use across Intelligence Types

Intelligence Type	Overall Average	Rank
Verbal-Linguistic	3.2	Medium
Logical-Mathematical	3	Medium
Visual-Spatial	2.7	Medium
Bodily-kinesthetic	3	Medium
Musical-Rhythmic	2.9	Medium
Interpersonal	3.1	Medium
Intrapersonal	3	Medium
Naturalist	3.1	Medium

Based on Oxford's (1990) rating scheme, the mean range of 2.5 to 3.4 means that the learners sometimes use strategies and they are labeled as

Abdorrezza Tahriri and Hoda Divsar

medium strategy users. Having coded the data and categorized the participating EFL learners in terms of their intelligence type, it was found that intelligence did not affect the *overall* strategy use of the EFL learners significantly. All types of intelligence fell within the ‘medium’ user of LLSs. However, as Table 2 indicates, participants of verbal linguistic type (3.2) are found to be higher in terms of their strategy use and visual-spatial students are the lowest strategy users (2.7). Based on Table 2, the participants of the study are found to be medium strategy users overall.

Table 3 shows the individual strategies employed by students of various intelligence types:

Table 3 Individual Strategy Use across Intelligence Types

	VL	LM	VS	BK	MR	Inter	Intra	N
Memory	3.1	2.9	2.5	3.1	3	3	2.9	3
Cogn.	3.5	3	2.9	2.9	2.8	3.2	3.1	3.2
Compen.	3.2	3.1	2.8	2.9	2.8	3.1	2.9	3.2
Metacogn.	3.7	3.3	3.2	3.6	3.2	3.7	3.7	3.7
Affect.	3	3	3.1	2.8	2.9	2.8	3	2.9
Social	3.3	2.8	2.2	2.9	2.9	3.1	3.3	3.2

*VL: Verbal-Linguistic *LM: Logical-Mathematical *VS: Visual-Spatial *BK: Bodily-Kinesthetic *MR: Musical-Rhythmic *Inter: Interpersonal *Intra: Intrapersonal *N: Naturalist

Concerning various types of individual strategies, the findings were different. Learners of verbal-linguistic type were found to be higher in terms of their use of cognitive strategies (between medium & high). As for metacognitive strategies, it was found that participants of several types including verbal-linguistic, bodily-kinesthetic, interpersonal, intrapersonal and naturalist were higher than logical-mathematical, visual-spatial and musical-rhythmic types (higher than medium). Visual-spatial learners were lower in terms of their use of social strategies (between low and medium).

5 Conclusions

This study found that Iranian EFL learners are ‘medium’ strategy users. This means that they *sometimes* use LLSs. This finding is line with the finding of Riazi and Rahimi (2005) who found that EFL learners are medium strategy users. In addition, they found that metacognitive strategies have the highest frequency which is confirmed in the present study. This reflects a need to pay

EFL Learners' Self-Perceived Strategy Use

further attention to strategy training in order to promote EFL learners' language achievement.

It was also found that students with verbal linguistic type are higher in terms of their strategy use and visual-spatial students are the lowest strategy users. It was also found that the participants of various intelligence types were different in terms of their individual strategy use. As for cognitive strategies, verbal-linguistic type was the highest category whereas verbal-linguistic, bodily-kinesthetic, interpersonal, intrapersonal and naturalist were higher than logical-mathematical, visual-spatial and musical-rhythmic types in terms of metacognitive strategy use. This is indicative of the necessity of paying further attention to various intelligence types in language classes in order to enrich the class atmosphere with various strategy training packages geared towards different intelligence types.

As the findings revealed, EFL learners' perceived strategy use might be related to their type of intelligence. As such, further attention should be paid to various strengths of EFL learners in strategy training. It should be stated, as the title of the paper reads, this research was a case study. As such, further empirical investigations are required to confirm the findings of the present study in various contexts. The nature of the interrelation of intelligence and LLSs should be further examined empirically across various groups, educational levels and contexts to come up with more conclusive answers.

To sum up, this study highlighted the significance of LLSs and also confirmed that intelligence type can be considered as a potentially determining factor. These findings are of pedagogical significance. The EFL instructors can make use of the findings of the present study and gear their strategy instruction toward students of various strength and capabilities in order to maximize the efficiency of strategy use.

References

- Acat, M. B. (2005). Applicability of the multiple intelligence theory to the process of organizing and planning of learning and teaching. *International Journal of Educational Reform*, 14(1), 54-72.
- Armstrong, T. (1993). *7 kinds of smart: Identifying and developing your many intelligences*. New York: Plume, Penguin Group.
- Arnold, J., & Fonseca, C. M. (2004). Multiple intelligence theory and foreign language learning: A brain-based perspective. *International Journal of English Studies*, 4(1), 119-136.
- Chamot, A. U., & El-Dinary, P. B. (1999). Children's learning strategies in language immersion classrooms. *Modern Language Journal*, 83, 319-338.

Abdorrezza Tahriri and Hoda Divsar

- Chan, D. W. (2001). Assessing giftedness of Chinese secondary students in Hong Kong: A multiple intelligences perspective. *High Ability Studies, 12*(2), 215-234.
- _____. (2003). Multiple intelligences and perceived self-efficacy among Chinese secondary school teachers in Hong Kong. *Educational Psychology, 23*(5), 521-533.
- Chastain, K. (1988). *Developing second-language skills: Theory and practice*. (3rd ed.). San Diego: Harcourt Brace Jovanovich.
- Cohen, A. D. (1998). *Strategies in learning and using a second language*. London: Longman.
- _____. (2003). The learner's side of foreign language learning; where do styles, strategies, and tasks meet? *International Research Applied Linguistic, 41*, 279-291.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Furnham, A., Shahidi, S., & Baluch, B. (2002). Sex and culture difference in perceptions of estimated multiple intelligence for self and family: A British-Iranian comparison. *Journal of Cross-Cultural Psychology, 33*(2), 270-285.
- Jinag, X., & Smith, R. (2009). Chinese learners' strategy use in historical perspective: A cross-generational interview-based study. *System, 37*(2), 286-299.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- _____. (1999). *Intelligence reframed. Multiple intelligences for the 21st century*. New York: Basic Books.
- _____. (2003, April). *Multiple intelligences after twenty years*. Paper presented at the American Educational Research Association, Chicago, Illinois.
- _____. (2005, May). *Multiple lenses on the mind*. Paper presented at the Expo Gestion Conference, Bogota, Colombia.
- Gardner, H., & Hatch, T. (1989). Multiple intelligences go to school: Educational implications of the theory of multiple intelligences. *Educational Researcher, 18*(8), 4-9.
- Gen, R. (2000). Technology and multiple intelligences: The praxis of learning intelligences. *Education at a Distance, 14*(4). Retrieved February 10, 2009, from http://www.usdla.org/html/journal/MAY00_Issue/story02.htm
- Han, W. J. (2006). *The correlation between elementary school students' Multiple Intelligences and English reading proficiency*. Retrieved June, 2010, from <http://nccur.lib.nccu.edu.tw/bitstream/140.119/33438/7/95101307.pdf>

EFL Learners' Self-Perceived Strategy Use

- Hall Haley, M. (2004). Learner-centered instruction and the theory of multiple intelligences with second language learners. *Teachers College Record*, 106(1), 163-180.
- Kim, H-N., & Leavell, A. G. (2006). Language learning strategy use of ESL students in an intensive English learning context. *System*, 34(3), 399-415.
- Lai, Y. (2009). Language learning strategy use and English proficiency of university freshmen in Taiwan. *TESOL Quarterly*, 43(2), 255-280.
- Larsen-Freeman, D. (2000). *Techniques and principles in language teaching*. (2nd ed.). Oxford: Oxford University Press.
- Lau, K. (2006). Reading strategy use between Chinese good and poor readers: A think-aloud study. *Journal of Research in Reading*, 29(4), 383-399. (Eric Reproduction Service Number: EJ 746137)
- Loori, A. (2005). Multiple intelligences: A comparative study between the preferences of males and females. *Social Behavior and Personality*, 33(1), 77-88.
- Mbuva, J. (2003). *Implementation of the Multiple Intelligences theory in the 21st century teaching and learning environments: A new tool for effective teaching and learning in all levels*. (Eric Reproduction Service Number: ED 476162)
- McMahon, S. D., Rose, D. S., & Parks, M. (2004). Multiple intelligences and reading achievement: An examination of the Teele Inventory of multiple intelligences. *The Journal of Experimental Education*, 73(1), 41-52.
- Mochizuki, A. (1999). Language learning strategies used by Japanese university students. *RELC Journal*, 30, 101-113.
- O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge: Cambridge University Press.
- Oxford, R. (1990). *Language learning strategies: What every teacher should know*. New York: Newbury House Publishers.
- Oxford, R., & Burry-Stock, J. A. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the strategy inventory for language learning. *System*, 23(2), 153-175.
- Riazi, A. (2007). Language learning strategy use: Perceptions of female Arab English majors. *Foreign Language Annals*, 40(3), 433-440.
- Riazi, A., & Rahimi, M. (2005). Iranian EFL learners' pattern of language learning strategy use. *The Journal of Asia TEFL*, 2, 103-129.
- Rubin, J. (1975). What the 'good language learner' can teach us. *TESOL Quarterly*, 9, 41-51.
- Rule, A. C., & Lord, L. H. (Eds.). (2003). *Activities for differentiated instruction addressing all levels of Bloom's taxonomy and eight multiple intelligences*. (Eric Reproduction Service Number: ED 475517)

Abdorrezza Tahriri and Hoda Divsar

- Stanford, P. (2003). Multiple intelligence for every classroom. *Intervention in School and Clinic*, 39(2), 80-85.
- Snyder, R. F. (2000). The relationship between learning styles/multiple intelligences and academic achievement of high school students. *The High School Journal*, 83(2), 11-20.
- Stern, H. H. (1975). What can we learn from the good language learner? *Canadian Modern Language Review*, 34, 304-318.
- Tsai, Y., Ernst, C., & Talley, P. C. (2010). L1 and L2 strategy use in reading comprehension of Chinese EFL readers. *Reading Psychology*, 31(1), 1-29.
- Yu, Y., & Wang, B. (2009). A study of language learning Strategy use in the context of EFL curriculum and pedagogy reform in China. *Asia Pacific Journal of Education*, 29(4), 457-468.
- Zhang, D., & Goh, C. (2006). Strategy knowledge and perceived strategy use: Singaporean students' awareness of listening and speaking strategies. *Language Awareness*, 15(3), 199-219.
- Weinstein, C., & Mayer, R. (1986). The teaching of learning strategies. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching* (3rd ed.), (pp. 315-327). New York: Macmillan.
- Wenden, A. L., & Rubin, J. (eds.) (1987). *Learner strategies in language learning*. UK: Prentice Hall.

Abdorrezza Tahriri
English Department
Faculty of Humanities
University of Guilan
Rasht, Iran
Tel.: + 981316690274-8 (Ext.: 4053)
Email: atahriri@gmail.com

Hoda Divsar
Payame Noor University
Shaft, Guilan Province, Iran
Email: hodadivsar@gmail.com

Received: January 26, 2011

Revised: May 25, 2011

Accepted: June 15, 2011

EFL Learners' Self-Perceived Strategy Use

Appendix A: Multiple Intelligences Survey (Armstrong, 1993)

The following checklist is prepared to determine your various intelligence types in terms of your different strengths. Please check the statements that apply to you. Thank you for your cooperation.

- Check (x) each statement that applies to you.

Section One

- ___ 1. Books are important to me.
- ___ 2. I can hear words in my head before I read, speak, or write them down.
- ___ 3. I get more out of listening to an audiotape or the radio than I do from television or films.
- ___ 4. I enjoy word games.
- ___ 5. I enjoy entertaining others or myself with tongue twisters, nonsense rhymes or puns.
- ___ 6. Other people sometimes have to stop and ask me to explain the meaning of the words I use.
- ___ 7. English, social studies, history were easier for me in school than math and science.
- ___ 8. When I drive down a freeway, I pay more attention to the words written on billboards than to the scenery.
- ___ 9. My conversation includes frequent reference to things I've read or heard.
- ___ 10. I've written something recently that I was particularly proud of or that earned me recognition from others.

Section Two

- ___ 1. I can double or triple a cooking recipe or carpentry measurements without having to put it all down on paper.
- ___ 2. Math and/or science were among my favorite subjects in school.
- ___ 3. I beat my friends in chess, checkers, Go or other strategy games.
- ___ 4. I like to set up little "what if" experiments. (For example, "What if I double the amount of water I give to a rose bush each week?")
- ___ 5. I've got a mind that sometimes works like a computer.
- ___ 6. I wonder a lot about how certain things work.
- ___ 7. I believe that most things have a rational explanation.
- ___ 8. I sometimes think in clear, abstract, wordless, imageless concepts.
- ___ 9. I like finding logical flaws in things that people say and do at home and at work.
- ___ 10. I feel more comfortable when something has been measured, categorized, analyzed or quantified in some way.

Abdorrezza Tahriri and Hoda Divsar

Section Three

- ___ 1. I often see clear visual images when I close my eyes.
- ___ 2. I am sensitive to color.
- ___ 3. I have a camera that I use to record what I see around me.
- ___ 4. I enjoy solving jigsaw puzzles, mazes or other visual puzzles.
- ___ 5. I have vivid dreams at night.
- ___ 6. I can generally find my way around unfamiliar territory.
- ___ 7. I like to draw or doodle.
- ___ 8. Geometry was easier for me than algebra in school.
- ___ 9. I can comfortably imagine how something might appear if it were looked down upon from directly above in a bird's eye view.
- ___ 10. I prefer looking at reading material that is heavily illustrated.

Section Four

- ___ 1. I engage in at least one sport or physical activity on a regular basis.
- ___ 2. I find it difficult to sit still for long periods of time.
- ___ 3. I like working with my hands at some concrete activity such as sewing, weaving, carving, carpentry, model-building or a similar task.
- ___ 4. My best ideas often come to me when I'm out for a long walk, a jog, or some other kinds of physical activity.
- ___ 5. I often like to spend my free time outdoors.
- ___ 6. I frequently use hand gestures or other forms of body language when conversing with someone.
- ___ 7. I need to touch things in order to learn more about them.
- ___ 8. I enjoy daredevil amusement rides, or similar thrilling experiences.
- ___ 9. I would describe myself as well coordinated.
- ___ 10. I need to practice a new skill by doing it rather than simply reading about it or seeing a video that describes it.

Section Five

- ___ 1. I have a good singing voice.
- ___ 2. I can tell when a musical note is off-key.
- ___ 3. I frequently listen to musical selections on radio, audiotapes or CDs.
- ___ 4. I play a musical instrument.
- ___ 5. My life would be poorer if there was no music in it.
- ___ 6. I catch myself sometimes walking down a street with a television jingle or other tune running through my mind.
- ___ 7. I can easily keep time to a piece of music with a simple percussion instrument.
- ___ 8. I know the tunes to many different songs or musical pieces.
- ___ 9. If I hear a music selection once or twice, I am usually able to sing it back fairly accurately.

EFL Learners' Self-Perceived Strategy Use

___10. I often make tapping sounds or single little melodies while working, studying, or learning something new.

Section Six

___ 1. I'm considered an individual that people come to for advice and counsel.

___ 2. I prefer sports like badminton, volleyball, or softball to solo sports such as swimming or jogging.

___ 3. When I've got a problem, I'm more likely to seek out another person for help than to work it out on my own.

___ 4. I have at least three close friends.

___ 5. I prefer social pastimes like Monopoly or Bridge to individual recreations such as video games or Solitaire.

___ 6. I enjoy the challenge of teaching another person or group of people what I know how to do.

___ 7. I consider myself a leader (or others have called me that.)

___ 8. I feel comfortable in the midst of a crowd.

___ 9. I like to get involved in social activities connected to my work, church or community.

___ 10. I would rather spend my evenings at a lively party than at home alone.

Section Seven

___ 1. I like to spend time alone to meditate, reflect, or think about important life questions.

___ 2. I have attended counseling sessions or personal growth seminars to learn more about myself.

___ 3. I have unique thoughts about things that others don't seem to understand.

___ 4. I consider myself to be a strong-willed or fiercely independent.

___ 5. I see myself as a loner (or others see me that way.)

___ 6. I have a special hobby or interest that I keep pretty much to myself.

___ 7. I have some important goals in life that I think about on a regular basis.

___ 8. I would prefer to spend a weekend alone in a cabin in the woods than at a fancy resort with lots of people around.

___ 9. I keep a personal diary or journal that records events of my inner life.

___10. I am self-employed or have at least seriously thought about starting my own business.

Section Eight

___ 1. My sensory skills --- sight, sound, taste, smell, touch --- are keen.

___ 2. I like to be outside and/or like outdoor activities like gardening, nature walks, or field trips geared towards observing nature and natural phenomena.

Abdorrezza Tahriri and Hoda Divsar

- ___ 3. I am deeply interested in animals and/or plants.
- ___ 4. I keep, have collected and /or created collections, scrapbooks, logs or journals about natural objects.
- ___ 5. I am aware and concerned about the environment and of endangered species.
- ___ 6. I easily learn characteristics, names, categorization and data about objects or species found in the natural world.
- ___ 7. I notice things in the environment that others often miss.
- ___ 8. I remember things about animals and/or plants.
- ___ 9. I categorize things from the natural world.
- ___ 10. I am very interested in television shows, videos, books or objects from or about nature, science or animals.

Appendix B: Strategy Inventory for Language Learning (SILL) Rebecca Oxford (1990)

This form of the Strategy Inventory for Language Learning (SILL) is for students of English as a second or foreign language. You will find statements about learning English. Please read each statement. On the separate Worksheet (page 4), write the response (1, 2, 3, 4, or 5) that tells How True of you the statement is.

- 1 = *Never or almost never true of me*
- 2 = *Usually not true of me*
- 3 = *Somewhat true of me*
- 4 = *Usually true of me*
- 5 = *Always or almost always true of me*

Answer in terms of how well the statement describes you. Do not answer how you think you should be, or what other people do. There are no right or wrong answers to these statements. Put your answers on the separate Worksheet. Work as quickly as you can without being careless. This usually takes about 20-30 minutes to complete.

- Remember, answer 1, 2, 3, 4, or 5 (as described above).

Part A

1. I think of relationships between what I already know and new things I learn in English.
2. I use new English words in a sentence so I can remember them.
3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.

EFL Learners' Self-Perceived Strategy Use

4. I remember a new English word by making a mental picture of a situation in which the word might be used.
5. I use rhymes to remember new English words.
6. I use flashcards to remember new English words.
7. I physically act out new English words.
8. I review English lessons often.
9. I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.

Part B

10. I say or write new English words several times.
11. I try to talk like native English speakers.
12. I practice the sounds of English.
13. I use the English words I know in different ways.
14. I start conversations in English.
15. I watch English language TV shows spoken in English or go to movies spoken in English.
16. I read for pleasure in English.
17. I write notes, messages, letters, or reports in English.
18. I first skim an English passage (read over the passage quickly) then go back and read carefully.
19. I look for words in my own language that are similar to new words in English.
20. I try to find patterns in English.
21. I find the meaning of an English word by dividing it into parts that I understand.
22. I try not to translate word-for-word.
23. I make summaries of information that I hear or read in English.

Part C

24. To understand unfamiliar English words, I make guesses.
25. When I can't think of a word during a conversation in English, I use gestures.
26. I make up new words if I do not know the right ones in English.
27. I read English without looking up every new word.
28. I try to guess what the other person will say next in English.
29. If I can't think of an English word, I use a word or phrase that means the same thing.

Part D

30. I try to find as many ways as I can to use my English.
31. I notice my English mistakes and use that information to help me do better.
32. I pay attention when someone is speaking English.
33. I try to find out how to be a better learner of English.
34. I plan my schedule so I will have enough time to study English.
35. I look for people I can talk to in English.
36. I look for opportunities to read as much as possible in English.

Abdorrezza Tahriri and Hoda Divsar

37. I have clear goals for improving my English skills.

38. I think about my progress in learning English.

Part E

39. I try to relax whenever I feel afraid of using English.

40. I encourage myself to speak English even when I am afraid of making a mistake.

41. I give myself a reward or treat when I do well in English.

42. I notice if I am tense or nervous when I am studying or using English.

43. I write down my feelings in a language learning diary.

44. I talk to someone else about how I feel when I am learning English.

Part F

45. If I do not understand something in English, I ask the other person to slow down or say it again.

46. I ask English speakers to correct me when I talk.

47. I practice English with other students.

48. I ask for help from English speakers.

49. I ask questions in English.

50. I try to learn about the culture of English speakers.