

On the Relationship Between Critical Thinking and Language Learning Strategies Among Iranian EFL Learners

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Abstract: This study investigates the relationship between critical thinking and the use of direct and indirect language learning strategies by Iranian learners. To this end, two survey instruments, the Strategy Inventory for Language Learning (SILL), and a questionnaire of Critical Thinking, were administered among 100 college students majoring in English translation at Karaj University. The findings reveals a statistically significant relationship between specific direct and indirect language learning strategies such as cognitive, metacognitive, and social with critical thinking, while memory, compensation, and affective strategies appeared to have no relationship with critical thinking.

Keywords: Critical Thinking, Language Learning Strategies, Iranian EFL Learners

1- Introduction

Over the last few decades, a gradual but significant shift has taken place within the field of education, resulting in less emphasis on teachers and teaching and greater stress on learners and learning. At the same time, a shift of attention has taken place in second language acquisition research from the products of language learning to the processes through which learning takes place [1]. As a result of this change, language learning strategies have emerged as integral components of various theoretical models of language proficiency [3].

All language learners use language learning strategies consciously or unconsciously when processing new information and performing tasks in language learning process. In order to enhance students' learning, it is suggested to use specific language learning strategies [1,4,5]. A number of factors may affect the choice of language learning strategies among the learners such as motivation, age, nationality, career choice, gender, learning style, and critical thinking.

Critical thinking is an everyday activity; whenever we want to make a decision, we go through a thinking process. Critical thinking is about asking questions; it improves memory because we engage more closely with ideas. Although the ability to think critically has always been important, it is a vital necessity for the citizens of the current century.

In this century, there is an increased demand for a new type of worker, the knowledge worker, or the symbol analyst [6].

Critical thinking: Critical thinking, a rapidly growing concept in education has stimulated a flood of recent research and publications. Nowadays, critical thinking is one of the major concepts under consideration in education. It has been mostly used for first language education in the United States, but today, its role in second and foreign language learning and teaching is of great importance [7]. Moon asserts that critical thinking and its relationship to the educational process has become a central issue and it is time to explore the term [8]. She adds since critical thinking is a process which is involved in any research activity; it can be considered as a principal concept to education, especially at higher levels. In fact, it is a fundamental goal of learning.

Language Learning Strategies: Second language researchers noticed the importance of various learning strategies when they were investigating into 'good language learner' in 1970s [9]. The results indicated that high degree of language aptitude and motivation are not the only effective factors influencing the ultimate success of language learners. In fact, the learner's success is due to their own active and creative participation in the learning process by the use of specific individualized learning techniques named learning strategies. In a sense, Naiman et al. found that 'good language learner' is in need of such strategies [9,10].

Chamot mentions some effective issues in language learning strategy research such as identification of language learning strategies, terminology and

Received 2010/31/10 , Accepted 2011/01/01

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classification of language learning strategies, learning strategies and learner characteristics, influence of culture and context, explicit and integrated strategy instruction transfer of strategies into new tasks models for language learning strategy instruction [11]. There are some terminologies and classifications of language learning strategies in SLA from different scholars.

For instance, Oxford categorizes strategies into two main types of direct and indirect. Direct strategies demand direct involvement of foreign or second language; because all direct strategies require mental processing of language, they lead to direct learning and use of a new language [1]. Of course, this may happen differently because each direct strategy of memory, cognitive and compensation has its own purpose. Indirect strategies help learners to acquire a new language indirectly but powerfully; they are called indirect strategies for they support and manage language learning without directly involving the target language. Oxford believes that "Indirect strategies work in tandem with the direct strategies [1]. She classified the direct learning strategies into three main groups, each of which approaches language differently with various functions:

Memory strategies: are used when new information enters into memory storage and for retrieving it when needed for communication (e.g., grouping, representing sounds, using imagery)

Compensation strategies: are other facilitative strategies that include guessing and using gestures. Such strategies fill the gaps in the knowledge of the language (e.g., switching to mother tongue, using synonyms)

Cognitive strategies: are used for linking new information with existing schemata and for analyzing and classifying it. They are responsible for deep processing, forming and revising internal mental models, and receiving and producing messages in the target language (e.g., repeating, taking notes, getting the idea quickly).

Indirect strategies are also classified into three subcategories:

Metacognitive strategies: are techniques used for organizing, planning, focusing, and evaluating one's own learning (e.g., self-monitoring, linking new information with the previous ones, looking for practice opportunities).

Social strategies: are used for facilitating interaction by asking questions and cooperating with others in the learning process (e.g., asking for clarification, developing cultural understanding).

Affective strategies: are used for controlling feelings, attitudes and motivation (e.g., lowering anxiety by the use of music, encouraging oneself).

Studies on Critical Thinking: Several investigations have been conducted into critical

thinking effects on the different aspects of foreign language learning. In a study on the relationship between collaborative learning and critical thinking of Iranian EFL learners, Naeini tested 144 adult female intermediate English language learners. She divided the participants into control and experimental groups. The findings revealed that the experimental group outperformed the control group [11]. Aleger, in his study on the effects of thinking skills on students' reading comprehension, found a very different outcome [12]. In this study, the researcher found that all students experienced significant gains in reading comprehension over this period. However, no statistical differences were found to exist between experimental and control groups.

Halpern summarized the results of his study on critical thinking which was conducted on students from U. S. and Japan [6]. He concluded that the best American students scored lower than the worst Japanese students in mathematical problem solving. The same results were also replicated for reaching skills and knowledge of history. Neubert and Binko in their study on critical thinking found that only 17% of the students can find, summarize, and explain information [13].

In a study conducted by Jodeiri, the relationship between the critical thinking ability and writing proficiency of intermediate Iranian EFL students was examined [14]. The results indicated that there is a strong relationship between critical thinking ability and English writing skill of Iranian intermediate EFL learners. In fact, the higher the level of critical thinking of the participants, the more skillful their English writing ability will be.

Moreover, Eghtedari in a study of 200 English language learners showed that there is also a strong relationship between participants' way of thinking and their reading comprehension ability [15]. Khamesian, showed a significant difference between the achievement of male and female critical thinking skills, but they could not enhance critical thinking skills in their writing assignments [16]. Mirzai studied the relationship between critical thinking and lexical inferencing of Iranian EFL learners [17]. The scores showed that those who gained higher in critical thinking outperformed those with lower scores.

In light of the above issues the effectiveness of critical thinking in the success of foreign language learners is highlighted. Many researchers admit the advantages of using those mentioned strategies, meanwhile they accept the fact that the more a learner is critical, the more s/he is successful not only in his or her second or foreign language learning but also in other aspects of his or her own life [18-20].

Therefore, this study tries to investigate whether or not a significant relationship between Iranian students' way of thinking and their use of language learning strategies exists. The study is going to investigate this question empirically and find whether this relation exists between critical thinking and Iranian EFL learners' use of language learning strategies or not. This study attempts to answer the following research questions:

1. Is there any significant relationship between Iranian EFL learners' critical thinking and their use of direct language learning strategies?
2. Is there any significant relationship between Iranian EFL learners' critical thinking and their use of indirect language learning strategies?

2- Methodology

Participants: The participants were 100 Iranian EFL undergraduate students majoring in English literature and English Translation at Azad University in Karaj, from among 100 questionnaires collected and 78 valid ones were taken in to account. The demographic characteristics of participants indicated that there were 64 female and 14 male students (82 percent and 18 percent respectively) participating in the study. Sex was not considered as a moderator variable in this study, so its potential influence on the results has not been separately taken in to consideration. The participants' age was between 18 and 30. There was four age groups in this study and most of the participants were between 22-24 years of age.

Instruments: The two instruments used in this study were the SILL (Strategy Inventory for Language Learning, Version 7) and a questionnaire of critical thinking. The SILL was designed as a self-report instrument for measuring the frequency of using language learning strategies [1]. The 50-item SILL ESL/EFL Version was designed to gather information about how learners learn English as a second or foreign language. The critical thinking questionnaire including 30 multiple choice items was administered to the participants to evaluate the skills of analysis, inference, evaluation, inductive reasoning and deductive reasoning.

Procedure: The SILL and Critical Thinking questionnaires were administered to 100 EFL learners. Both of the questionnaires were administered in a session. First the Critical Thinking questionnaire and then the SILL questionnaire was administered. The purpose of the survey was to discover the relationship between critical thinking and language learning strategy used by students. In doing so, the participants were requested to select the most appropriate answers to the questions. The questionnaire administration took approximately 45

minutes. Having collected the two completed questionnaires, the researcher analyzed the data and extracted the results.

Data Analysis

The data were collected over a period of three weeks, using two different instruments; namely, the SILL questionnaire and the Critical Thinking questionnaire. Subsequently, the data were subjected to statistical analysis. The Statistical Package for Social Sciences (SPSS) for Microsoft Windows 16 was applied for this purpose. The descriptive statistics were calculated primarily to determine what kinds of language learning strategies Iranian EFL learners use. Since the researchers wanted to find out the relationship between critical thinking and language learning strategy use, and to show that critical thinking can be a predictor of the use of language learning strategies, the Multiple Regression Analysis was used. The 0.05 level of statistical significance was set at all statistical tests in the present study.

3- Results and Discussion

Having collected the data through using the two research instruments; namely, the SILL and the Critical Thinking questionnaires, the researchers tried to analyze the data while using some statistical techniques. Descriptive statistics were calculated primarily to determine what kinds of language learning strategies Iranian EFL learners used more.

Table 1 Descriptive statistics for all variables

	N	Range	Mean	St. err	S.D	Variance
Critical thinking	78	99.00	99.15	2.165	19.244	370.33
cognitive	78	35.00	43.62	.817	7.264	52.77
memory	78	30.00	31.30	.709	6.307	39.77
compensation	78	18.00	19.35	.458	4.073	16.59
metacognitive	78	30.00	32.68	.761	6.770	45.83
affective	78	15.00	18.39	.368	3.279	10.75
social	78	23.00	19.91	.516	4.594	21.10
Valid N	78					

According to Table 1, the mean of each variable indicates the average number of responded questions of each direct or indirect language learning strategies by Iranian EFL learners. As the descriptive statistics show in Table 1, EFL learners use all language learning strategies. The mean score of cognitive and metacognitive strategies are higher than that of other language learning strategies; that is, EFL learners mostly use cognitive and metacognitive strategies in

language learning. The participants revealed the least mean score in affective language learning strategy use.

A general look at the table shows that language learners use all different types of language learning strategies; however, the extent of using each strategy might be different. Based on the sample data within the present study cognitive strategies were mostly used by the participants, whereas affective strategies were least used by them. From among the other strategies, the participants used them all but differently. They used language learning strategies in the following order: cognitive (mean= 43.62), metacognitive (32.68), memory (31.30), social (19.91), compensation (19.35) and affective strategies (18.39). In terms of critical thinking, participants showed reasonable mean score in critical thinking as well (M=99.15).

To answer the first research question, *Is there any significant relationship between Iranian EFL learners' critical thinking and their use of direct language learning strategies*, a Multiple-Regression analysis was used. To assess the statistical significance of the result it is necessary to look in the table labeled the summary of one-way ANOVA. As Table 2 shows, by the use of a one-way ANOVA, the researchers found a significant relationship between the predictors, language learning strategies, and critical thinking overall, with the observed value of F as 9.331 at the 0.05 level of significance ($F(3,75)=9.331, P<0.05$). Direct language learning strategies use was considered as the predictor variable and critical thinking as the dependent variable. This table reports an ANOVA which assesses the overall significance of our model. As $P<0.05$, our model is significant.

Table 2 Summary of one-way ANOVA

Model	Sum of the squares	df	Mean Square	F	Sig.
Regression	7851.092	3	2617.031	9.331	.000.
Residual	21035.086	75	280.0468		
Total	28886.177	78			

Predictors (constant): compensation, cognitive, memory

Criterion Variable: critical thinking

Although the existence of a significant relationship between critical thinking and direct language strategies as a whole was proved, the researchers used the standardized beta coefficients to give a measure of the contribution of each variable to the model. A large value indicates that a unique change in this predictor variable has a large effect on the

dependent variable. Here, critical thinking is the criterion (dependent) variable, and cognitive, memory and compensation strategies are the predictor variables.

The beta value is a measure of how strongly each predictor variable influences the criterion variable. The beta is measured in units of standard deviations. For example, a beta value of 0.296 indicates that a change of one standard deviation in the predictor variable (cognitive strategy use) will result in a change of 0.296 standard deviations in the criterion variable (critical thinking). Thus, the higher the beta value, the greater the impact of the predictor variable on the criterion variable.

Table 3 Summary of Standardized Beta Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.030	13.620		2.058	.043
	cognitive	.783	.282	.296	2.774	.007*
	memory	.610	.348	.200	1.752	.084
	compensation	.923	.519	.195	1.780	.079

a. Criterion Variable: Critical Thinking

To find out how well each of the variables contributed to the equation, it is needed to look in the coefficients table. Scanning the Sig. column, we find only ONE variable that makes a statistically significant relationship with critical thinking (less than .05); that is, cognitive strategy.

Results from a multiple regression analysis showed that critical thinkers did show a significant relationship with the overall direct language learning strategies on the one hand. The critical thinkers, on the other hand, showed a significant relationship with cognitive strategy. As it can be seen from the Table 3, critical thinkers preferred the cognitive language learning strategies. However, no significant relationship was found between critical thinking and other direct strategies that are compensation and memory strategies since their p values were greater than 0.05.

The second research question, *“Is there any significant relationship between Iranian EFL learners' critical thinking and their use of indirect language learning strategies?”* was posed. Table 4 reports an ANOVA which assesses the overall significance of our model. As $F(3,75)=15.096, P=0$, our model is significant. So, as a whole a

significant relationship between critical thinking and indirect language learning strategies was found.

Table 4 Summary of one-way ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	10875.734	3	3625.245	15.096	.000 ^a
Residual	18010.443	75	240.139		
Total	28886.177	78			

a. Predictors: (Constant), social, affective, metacognitive

b. Criterion Variable: critical thinking

The relationship between critical thinking and indirect language strategies as a whole was proved to be significant. However, the researchers used the standardized beta coefficients to give a measure of the contribution of each variable to the model. As it is shown, a large beta value indicates that a unique change in the predictor variable has a large effect on the dependent variable. Here, indirect language learning strategies are considered as the predictor variables and critical thinking as the dependent (criterion) variable.

Table 5 Summary of Standardized Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 (Constant)	31.881	10.769		2.960	.004
metacognitive	.915	.344	.322	2.660	.010*
affective	.893	.666	.152	1.340	.184
social	1.052	.487	.251	2.161	.034*

a. Criterion Variable: critical thinking

As the Table 5 indicates two indirect language learning strategies of metacognitive and social have significant relationship with critical thinking since their p values are less than 0.05. While it shows that affective language learning strategies do not have any significant relationship with critical thinking since the p value is greater than 0.05 (0.184). As it can be seen from the Table 5, critical thinkers preferred the metacognitive and social language learning strategies. However, no significant relationship was found between critical thinking and

the other class of indirect strategies; that is, affective language learning strategies.

4- Conclusion

The results of the study indicated that there is a significant relationship between Iranian use of language learning strategies and their way of thinking, whether critical or non-critical. This positive relation may be a replication of many previous studies concerning the effectiveness of critical thinking on the ultimate success of language learners in the challenging process of foreign language learning. There are many other investigations that confirm the effectiveness of critical thinking on different aspects of second or foreign language learning that are conducted in different countries [13,7,22-25].

In order to function effectively in society, encounter different problems, and promote independent learning, individuals must be able to think critically and reason effectively. Since a significant relationship was found between the critical thinking ability and using language learning strategies, we can conclude that utilization of language learning strategies can help students to enhance their way of thinking, in other words, to think more critically.

It seems that college students studying for a degree in English are very much in need of course books and materials that invoke critical thinking, since the participants in this study did not show remarkable marks in critical thinking test.

The prime suggestion of this study would be directed to syllabus designers and material developers for writing courses to consider critical thinking as one of the effective elements in both academic and future career success. Involving courses with specific focus on critical thinking and also language learning strategies in course syllabuses will result in educating intellectual students with analytical abilities that are clear, precise, well reasoned, and helpful.

Also, the research reveals that individuals who have been taught to think critically in their education years will demonstrate more professionalism in the use of ideas, assumptions, inferences, and intellectual processes. They will indicate the ability to analyze related questions and issues clearly and precisely, organize and formulate information accurately, distinguish the relevant from irrelevant, recognize questionable assumptions, as well as demonstrate sensitive to important implications and consequences.

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