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Research paper

Considering the Effect of Cognitive Strategies and Risk-taking on EFL Learners' Language Achievement

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Abstract

This research aimed to find the relationship among cognitive strategies, risk-taking, and language achievement of Iranian intermediate EFL learners.100 intermediate EFL learners of Atlas Institute in Tabriz were chosen. The sample of the study included both male and female participants who were between 18 to 22 years of age. Two instruments were used for data collection in this study: the Persian version of Eysenck's Personality Test and the Strategies Inventory of Language Learning (SILL) Questionnaire. This study was a descriptive-analytical study conducted using a quantitative design. Researchers found a positive relationship between cognitive strategies and language achievement of Iranian intermediate EFL learners. However, there was a low positive correlation between risk-taking and intermediate EFL learners' language achievement.

Keywords: Cognitive strategies, EFL, Language achievement, Risk-taking.

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Introduction

Emphasis on learners and learning has increased recently in the language learning procedure. Students should be asked to become less reliant on teachers and try to be independent (Benson & Voller, 1997). Accordingly, language-learning strategies (LLSs) and the various aspects of language learners (such as cognitive, social, affective, and personality factors) have become significant parts of learning (Bachman & Palmer, 2010).

Personality theory believes that each person has unique traits and can be classified based on them (Alastair, 2009). These traits affect learners' preferences and they can have an impact on education and the learning process. Risk-taking is essential in language acquisition (Brown, 2007). Learners who take risks often present outgoing characteristics and apply strategic methods, such as guessing, to navigate uncertain and risky situations (Beebe, 1983).

Literature Review

Language strategies contain any actions or techniques we use to learn and understand new information (O'Malley & Chamot, 1990; Oxford, 1990). Reinders and Cotterall (2004) classified cognitive strategies into two groups of strategies that are used for learning new language and techniques to use it. Moreover, Lessard-Clouston (1997) defines them as a tool that EFL learners use to develop communicative competence. Peimani and Saeidi (2015) found that risk-taking did not affect fluency in speaking. However, they found a strong relationship between risk-taking and grammatical accuracy in speaking. Zhou (2011) declared that risk-taking improved students' oral English communication skills considering fluency and accuracy. Besides Yang and Lin (2015) mentioned that risk-taking had a positive effect on the fluency and accuracy of oral English output.

Teaching learning techniques have a positive impact on the development of language skills (Hsiao & Oxford, 2002). Huang (2010) found a positive effect of teaching learners' strategies and using different methods of consciousness-raising to increase learners' awareness of their learning procedure. Dehbozorgi (2012) mentioned that proficiency level did not have any effect on language learning. It was found that intermediate learners tried to take risks more than other groups.

Ariffin, et al. (2020) found that learners who use Online Language Learning Strategies (OLLS) preferred metacognitive strategies more than cognitive strategies. There were studies on studying

the effect of cognitive strategies and risk-taking separately on language learning. However, there are few studies about them in Iran. Furthermore, the novelty of this research is considering the impact of cognitive strategies and risk-taking together on language achievement. So, this study aims to consider these variables together in the improvement of language achievement in the Iranian context.

Research Questions

This study sought to answer the following questions:

1. Do cognitive strategies have any effect on the language achievement of Iranian intermediate EFL learners?
2. Does risk-taking have any effect on language achievement of Iranian intermediate EFL learners?
3. Is there any correlation among cognitive strategies, risk-taking, and language achievement of Iranian intermediate EFL learners?

Methodology

Participants

This research was carried out on Iranian intermediate EFL learners as the population of this study. 100 male and female EFL learners from Atlas Institute in Tabriz, East Azerbaijan were selected. All students were bilingual and they knew Azerbaijani Turkish and Persian. Their age ranged from 18 to 22 years of age. A pre-test was used to ensure the sample's homogeneity.

Instrumentation

Two instruments were used for data collection in this study:

a. Persian version of Eysenck's Personality Test (1991)

b. Strategies Inventory of Language Learning (SILL) Questionnaire by Oxford (1990)

Eysenck's Personality Test (1991)

This questionnaire was used to determine the degree of individual's risk-taking. The questionnaire contains sixteen items. The participants were asked to rate each item on a 5-point likert-scale from almost never to always. Numbers were assigned to them from one to five (almost never=1, rarely=2, sometimes=3, often=4, and always=5). The total score for this questionnaire ranges from 16 to 80. This questionnaire is a standard one. The reliability was measured thorough Cronbach's alpha and Spearman-Brown's equal-length split-half reliability. Alpha reliability and split-half reliability were 0.83 and 0.85, respectively. Therefore, it can be considered as an appropriate questionnaire to determine participant's level of risk-taking. The Persian version of this questionnaire developed by Kiany and Pournia (2008) were used in the present study. According to the result of this test, participants were categorized in three groups of high, moderate, and low risk-takers. Participants who were at the percentiles lower than 30 were considered as low risk-takers, those who were at the percentiles greater than 70 as high risk-takers, and those who were at the percentiles between 30 and 70 as moderate risk-takers.

Strategies Inventory of Language Learning (SILL)

The SILL was originally developed by Oxford (1990) and it was designed to assess students' learning strategies and students' learning styles. The SILL consists of 50items, which Oxford (1990) divided it into six categories. In SILL there are 6 parts. Part A consists of nine statements refer to memory strategies, part B consists of fourteen statements refer to cognitive strategies, part C consists of 6 statements refer to compensation strategies, part D consists of nine statements refer to metacognitive strategies, part E consists of six statements refer to affective strategies, and part F consists of six statements refer to social strategies. Only part B was used

since the focus of the present study was on cognitive strategies. The external validity of SILL questionnaire was measured by using content validity. The scoring of each item of the SILL questionnaire (Oxford, 1990) was done based on a five-point Likert scale. Each point represents the level of the participants' level l of agreement, namely, 1-never true of me, 2-usually not true of me, 3-Somewhat true of me, 4-usually true of me, 5-always true of me. The following are the key and scale to understand the use of SILL (Oxford, 1990): 1.High: Always or almost always used 4.5 to 5.0; Usually used 3.5 to 4.4 2.Medium: Sometimes used 2.5 to 3.4

3. Low: Generally not used 1.5 to 2.4; Never or almost never used 1.0 to 1.4

Procedure

The researcher attended Atlas Institute and distributed the questionnaires. First, the researcher administered the personality questionnaire to the students. The researcher postponed giving the second questionnaire (SILL) because some researchers (e.g., Saks, 2016) have suggested that if the number of questions increases, students will not be able to concentrate well so the validity and reliability of questions are decreased. After two weeks, the researcher administered the second questionnaire to those of whom returned the personality questionnaire. The score of the final term was considered a language achievement. Everyone chose a number for themselves instead of writing their real name to answer the questionnaires to remain anonymous.

Design

This study was a descriptive-analytical study that was conducted using a quantitative design. The students' personalities (risk-taking) and their cognitive strategies are the variables in this research. The cognitive strategies and risk-taking were analyzed as independent variables but students' language achievement was interpreted as a dependent variable.

Data Analysis

Questionnaires of Eysenck's Personality Test (1991) and Strategies Inventory of Language Learning (SILL) were used to gather data. The obtained data were analyzed using the statistical software SPSS v23. The Pearson Correlation was used to determine any relationship among cognitive strategies, risk-taking, and language achievement. The Multiple Linear Regression was run.

Results

Table 1
Descriptive Statistics; Testing Assumption of lack of Univariate Outliers

	N	Minimum	Maximum	Mean	Std. Deviation
Zscore: cognitive strategies	100	-2.62	1.96	.000	1.00
Zscore: risk taking	100	-2.57	2.11	.000	1.00
Zscore: language achievement	100	-1.79	3.20	.000	1.00

Table 1 displays the Z-scores for cognitive strategies, risk-taking, and language achievement. No Z-scores were higher than +/- 3.2, so, data did not suffer from any significant univariate outliers.

Table 2
Mahalanobis Distances; Testing Lack of Multivariate Outliers

	N	Minimum	Maximum	Mean	Std. Deviation
Mahalanobis Distance	100	.19	11.99	2.9752	2.38989

Since the maximum MD of 11.99 was lower than 16.26, data did not suffer from any multivariate outliers.

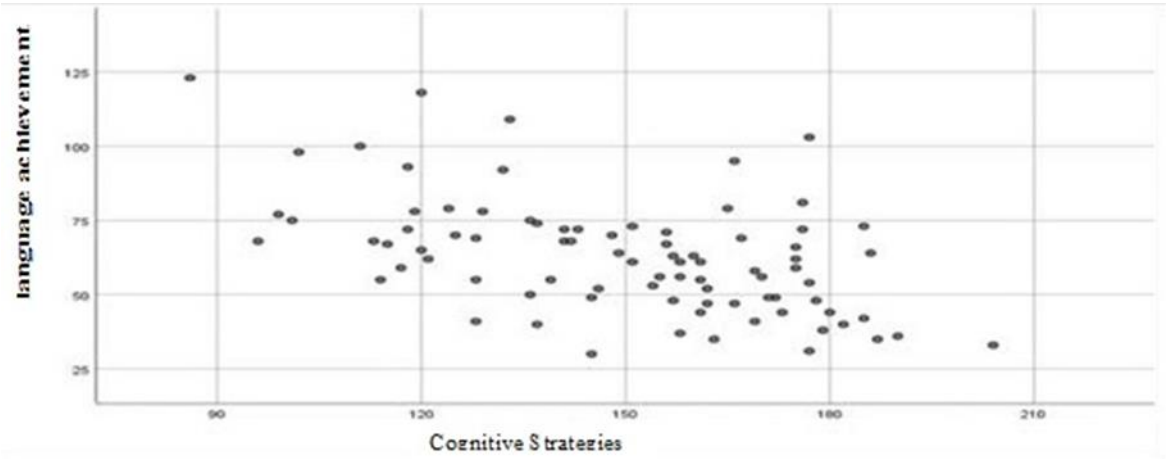
Table 3
Descriptive Statistics; Testing Normality of Data

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
cognitive strategies	100	-.291	.273	-.740	.530
risk taking	100	-.372	.273	-.625	.530
language achievement	100	.800	.272	.875	.530

Bachman (2005) and Bae & Bachman (2010) noted that absolute values of skewness and kurtosis less than two indicate that data do not show any significant departure from normality. Based on these criteria, the present data did not show any significant departure from normality.

Exploring the First Research Question

Scatter Plot 1 displayed the spread of dots along the diagonal and showed rising-and-falling patterns; hence non-linearity of the relationship between cognitive strategies and language achievement. They also showed a funnel shape. The spread of dots was wider on the left tail. Thus, the assumption of homoscedasticity was not retained.



Scatter Plot 1, Testing linearity and homoscedasticity of the relationship between cognitive strategies and language achievement.

Table 4
Pearson Correlation between cognitive strategies and language achievement

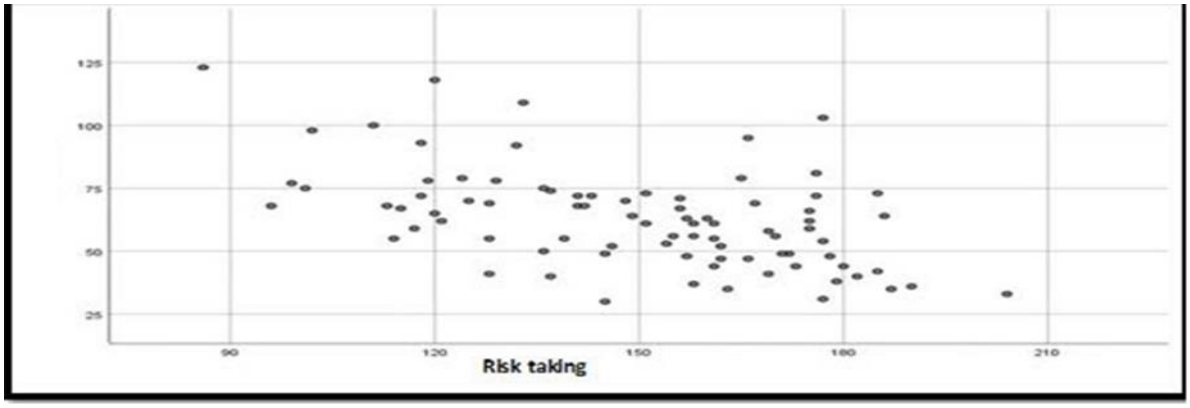
		Language Achievement
Cognitive Strategies	Pearson Correlation	.306**
	Sig. (2-tailed)	.005
	N	100

**. Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4, the correlation coefficient between cognitive strategies and language achievement was 0.30. So, there was a significant relationship between cognitive strategies and language achievement. Thus, the first null hypothesis was rejected.

Exploring the Second Research Question

Scatter Plot 2 shows the spread of dots along the diagonal in rising and falling patterns; hence non-linearity of the relationship between risk-taking and language achievement represented that the assumption of homoscedasticity was not retained.



Scatter Plot 2, Testing linearity and homoscedasticity of the relationship between risk-taking and language achievement.

Table 5
Pearson Correlation between risk-taking and language achievement

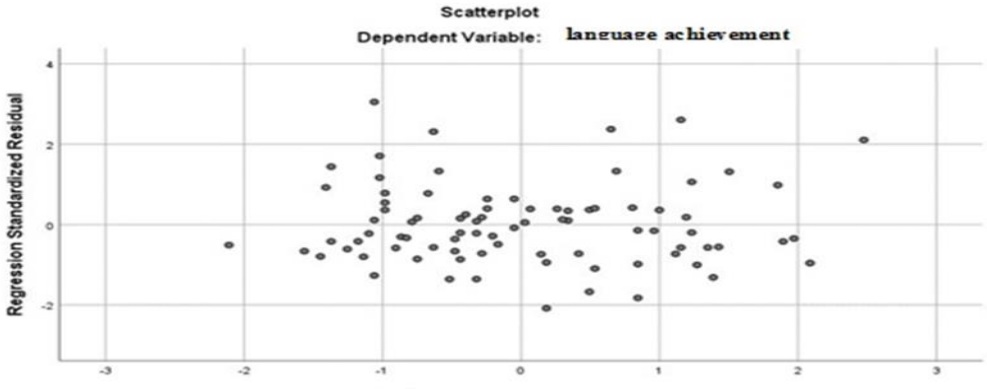
		Language Achievement
Risk Taking	Pearson Correlation	.193**
	Sig. (2-tailed)	.001
	N	100

**. Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 5, the correlation coefficient between risk-taking and language achievement was 0.19. Therefore, there was a low positive correlation between the variables, and the second null hypothesis was retained and there was not a significant relationship between risk-taking and language achievement.

Exploring the Third Research Question

Scatter Plot 3 represents that spreads of the dots did not form a funnel shape, it was concluded that the assumption of homoscedasticity was retained. However, the spread of dots showed rising-and-falling trends, which may indicate the non-linearity of the regression model.



Scatter Plot 3, Testing linearity and homoscedasticity of the regression model

Table 6
Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.536[a]	.284	.265	16.897
2	528[b]	.281	.270	16.787

a. cognitive strategies and risk-taking (Constant)

b. cognitive strategies (Constant)

c. Dependent Variable: language achievement

Based on the results of regression analysis, both cognitive strategies and risk-taking were entered into the regression model and they showed a 28.4 percent (R = .536, R2 = .284) relationship with language achievement.

The results of ANOVA tests of the significance of the regression model revealed that the regression model had statistical significance in the first (F (2, 84) = 15.596, p < .05) and second (F (1, 83) = 30.792, p < .05) steps. Thus, the third null hypothesis was rejected.

Table 7
ANOVA[a] Test of Significance of Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	8646.944	2	4323.472	15.596	.000[b]
1 Residual	22624.616	84	279.316		
Total	31271.560	86			
Regression	8499.500	1	8499.500	30.792	.000[c]
2 Residual	22772.060	83	277.708		
Total	31271.560	85			

a. Dependent Variable: language achievement

b. cognitive strategies and risk-taking (Constant)

c. cognitive strategies (Constant)

Discussion

This research was carried out to find the relationship among Iranian intermediate EFL learners' cognitive strategies, risk-taking, and language achievement. Pearson correlation coefficient test was used to verify the first two research questions and multiple linear regression was used to answer the third research question. The result of the first question indicated that there was a positive relationship between Iranian intermediate EFL learners' cognitive strategies and their language achievement. The result of this study is in line with Bashir et al (2021) who found that students' language achievement has a positive relationship with memorial, cognitive, and social

strategies. Also, its findings are consistent with those of Asrawaty et al (2022) who carried out research to a) observe LLSs employed by the learners based on their personality factors, b) find out to what extent LLSs and personality factors correlate with speaking skill, c) examine the effects of LLSs and personality factors on learners' speaking development. The results showed that LLSs played important functions in second language learning success. The results are in agreement with Nikoopour and Amini Farsani (2010) who found that learners used mostly metacognitive and cognitive strategies out of six categories and they minimally used memory strategies. Furthermore, the results were consistent with those of Salahshour et al. (2012), and Soodmand and Movassagh (2017).

Ratnaningsih (2015) showed that students employed metacognitive and cognitive listening strategies to enhance their listening comprehension in the TOEIC listening test. Saks and Leijen (2018) investigated the potential impacts of metacognitive and cognitive strategies on language achievement. They found that the more the students are encouraged to use cognitive strategies, the better language learning outcomes. It seems reasonable to include cognitive strategies in their educational curriculum from the beginning. Consequently, learners learn how to be strategic learners via their educational stages at various levels because strategy use learning occurs over a long period. Richards and Renandya (2002) argued that when learners use strategies without understanding them, is not successful, especially in the transfer of strategies to new activities so if strategy use is inserted in class tasks regularly, it will be helpful.

The results that arose from this study offer a variety of pedagogical implications that can be accounted for language skate-holders namely: policymakers, teachers, school staff, and learner' parents, employee and officials. It is necessary to have a worthy understanding regarding the association and influence of these variables on each other.

One of the important pedagogical implications derived from findings is the fact that teachers play an important function both in forming learners' strategic behavior and improving their successful employment of strategies in learning a language. As a result, teachers must assist their learners become autonomous and self-directed language learners by integrating the teaching of language learning strategies into their regular teaching activities. Saks (2016) found a positive effect of using cognitive strategies and students' self-regulation. Furthermore, teachers should take into account the fact that they should teach their students to learn language learning strategies meaningfully rather than focusing on their rote practice.

The results of the study present another implication for the classrooms: not only teacher instruction but also naturalistic processes have an important function in language learning and this function should be exploited to the benefit of the learners. In addition, language learning includes more than learning the target language because learners develop linguistically, socially, and cognitively at the same time.

The other implication refers to the importance of enhancing students' use of language learning strategies in general and cognitive strategies in particular to help students' successful language achievement.

The language classes and teachers can function as the major facilitators of healthy risk-taking by focusing on improving language skills. The role of the teacher is important because the teacher should both be supportive and provide language classes that are suitable for the students' risk-taking levels (Lee & Ng, 2010). The teachers should support the students' linguistic attempts and efforts without considering the results of students' oral performance. Teachers should also bear in mind that some students feel more confident with their peers when talking than when speaking with a teacher or a native speaker. Because of this fact, some opportunities for risk-taking should

be provided for those students who seem risk-averse before asking them to do risky tasks in front of a teacher. To accomplish this, students should know that risk-taking has a value, it is not the source of disapproval. Knowing the fact that errors are natural will assist students have tolerance while interacting with their peers and teachers and be less worried about making mistakes. According to the results, teacher should encourage risk-taking in the classrooms. Assignments should be challenging in the classes. Learners should be encouraged to incorporate teaching techniques (e.g., Kiany & Pournia, 2006).

Conclusion

This study was carried out to see whether there was any relationship among cognitive strategies, risk-taking, and language achievement. The first research question revealed a positive relationship between cognitive strategies and language achievement of Iranian intermediate EFL learners. Therefore, a complete understanding of the cognitive strategy and language achievement relationship helps implement this knowledge in teacher education to train them and in both school and university pedagogy to make language studies easy. The findings are more promising if students are required to verbalize learned strategies. In this sense, Swain (2000) emphasizes collaborative dialoguing. It means that strategy teaching will be effective if it includes verbalizing the strategies used. So, if teachers explicitly teach students the strategies and ask the students to verbalize the strategies, this knowledge-building takes place.

The second research question indicated that there was a low positive correlation between Iranian intermediate EFL learners' risk-taking and their language achievement. Although risk-taking is not equal to learning, it is a personality trait related to second or foreign language achievement which can improve language learning. The fact is that students test their hypotheses about language while speaking. They try to make themselves understood and are in a constant

process of negotiation and reformulation of output. As a result, teachers should help students in this trial-and-error process by motivating them to take risks, by providing the contexts in which students can take risks, and by assisting them to develop positive attitudes towards errors. Learners' language learning process will be enhanced by these three teaching behaviors. Risk-taking is worth trying if language achievement is the result of risk-taking. The results that arose from this study offer a variety of pedagogical implications that can be accounted for by language skate-holders namely: policymakers, teachers, school staff, learners' parents, employees, and officials. It is necessary to have a worthy understanding regarding the association and influence of these variables on each other.

One of the facets of the limitation of this study was that the genders of the participants were not taken into account. Therefore, further researches need to be carried out concerning to this variable. Replication of this study with male and female students at different levels of education in different contexts is necessary to understand how well results can be generalized to other students in Iran. Perhaps an integration of local and trans-contextual research that approaches English language learning (ELL) from different perspectives is the most promising in the globalized world in which foreign language learners live. The number of participants was another limitation of the study. The population of the study was not large as a result generalization of data has to be implied carefully. To use the results for a wider population, the study should be replicated with larger groups. The research employed a correlation study to find out the relationship between variables. Quantitative studies should be carried out. Future research can be planned to examine the relationship between risk taking and four major language skills and components (reading, speaking, listening, writing, vocabulary, grammatical structure, …..). The interaction between risk-taking, gender and oral narrative task could also be another potential area of research.

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