

Roles of Test-taking Strategies, Self-regulation Strategies, and Self-efficacy in Iranian Ph.D. Candidates' Language Proficiency

Fariba Rahimi Esfahani

English Department, Shahrekord Branch, Islamic Azad University (IAU)

Rahimi_rafiba@yahoo.com

Sajad Shafiee

English Department, Shahrekord Branch, Islamic Azad University (IAU)

sshafiee@iaushk.ac.ir

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Abstract

The purpose of this study was to examine the roles that test-taking strategies, self-regulation strategies, and self-efficacy could play in the language proficiency scores of the PhD candidates at Islamic Azad University (IAU). Ninety-eight students at the Ph.D. level at IAU, Shahrekord Branch, Shahrekord, Iran, who were to take the English Proficiency Test (EPT), were asked to fill out the test-taking strategies, self-regulation strategies, and self-efficacy questionnaires. They were also given a sample of EPT as their final exam for the English course they were taking. Multiple regression analysis was used to investigate the predictive powers of self-efficacy, self-regulation strategies, and test-taking strategies in accounting for the students' language proficiency. Results revealed that the three independent variables could significantly account for language proficiency, with self-regulation strategies being the best predictor. These results suggest that these individual attributes play a major part in the success of students in language proficiency tests.

Keywords: Language Proficiency, Self-efficacy, Self-regulation Strategies, Test-taking Strategies

Resumen

Este trabajo busca analizar los roles que pueden jugar las estrategias de examen, las autorregulatorias y las de autoeficacia en el desempeño de candidatos doctorales de la Islamic Azad University en sus evaluaciones de proficiencia lingüística. Noventa y ocho estudiantes de nivel doctoral en la IAU, filial Shahrekord de Shahrekord, Iran, que debían tomar el examen de proficiencia en inglés, completaron cuestionarios sobre estas estrategias. También se les pidió que completaran un examen de proficiencia similar al de su examen final. Se utilizaron múltiples análisis de regresión para investigar los poderes predictivos de estas estrategias en relación con la proficiencia lingüística de los estudiantes. Los resultados muestran que las tres variables independientes podrían predecir la proficiencia lingüística, siendo las estrategias autorregulatorias las mejores predictoras de dicha proficiencia. Estos resultados sugieren que estos atributos individuales juegan un rol importante en el éxito de los estudiantes en exámenes de proficiencia lingüística.

Palabras claves: Proficiencia lingüística, autoeficacia, estrategias de autorregulación, estrategias de examen

Introduction

Testing plays a pivotal role in the education process to enhance and strengthen ongoing learning, and has a significant impact on the quality of pedagogy (Cowie & Bell, 1999). As it was well-stated by Pierce (2002, as cited in Kirmizi & Kömeç, 2016), testing is essentially incorporated in any learning and teaching activity. It not only provides vital information for pedagogical decisions which are necessary for a day-to-day course of actions taken by all educational stakeholders and paves the ground for diagnosing learners' weak and strong points related to classroom methodology, but also presents particular feedback to the learners boosting the quality of both learning and teaching. Immediate feedback is also provided to the instructors forming and regulating their teaching practices according to the learning styles of their learners. Therefore, tests, various types of exams and evaluation models are crucial instruments employed to measure the learning process.

The American Educational Research Association issued in July of 2000 (as cited in Gregory, 2004) provided the following description for high-stakes testing: Certain uses of achievement test results are termed "high stakes" if they carry serious consequences for students or educators. For individual students, high scores may bring a special diploma attesting to exceptional academic accomplishment; low scores may result in students being held back in grade or denied a diploma/degree.

In Iran, Ph.D. candidates at all branches of Islamic Azad University (IAU) are required to provide an acceptable test result on the IAU English Proficiency Test (EPT) if they plan to pursue their education at the Ph.D. level. This requirement has turned to a hurdle for many Ph.D. candidates since they lack a working knowledge of English. To see if their performance on the EPT could be influenced by a number of factors such as test-taking strategies, self-regulation strategies, and self-efficacy, this study explores the roles of these independent variables on this high-stakes test performance by Ph.D. candidates.

Cohen (2007) defined test-taking strategies as the kind of strategies which respondents use at the time of completing language tests. In fact, test-taking strategies are consciously "selected processes that the respondents use for dealing with both language issues and the item-response demands in the test-taking tasks at hand" (p. 308). In addition, Cohen (1998), influenced by Fransson's (1984, p. 64) assertion that "test takers may not proceed via the text but rather around it", suggests that test-taking strategies consist of language use and test-wiseness strategies. He also maintained while language-use strategies may be determined by the learners' proficiency in the language under assessment, test-wiseness strategies may depend on the test takers' knowledge of how to take a test.

On the other hand, still pertaining to the personal attributes of the learners, in response to the question that how learners manage their learning processes, the research field of self-regulated learning has been developed since the mid-1980 (Zimmerman, 2001). A general definition of self-regulation (SR) recommended by Zimmerman (2000) is the extent to which learners are "meta-cognitively, motivationally, behaviorally active on their learning" and in achieving their goals. To put it differently, SR refers to self-generated ideas and actions of the learner which are in the direction of accomplishing educational aims and necessitate the learner's active participation in the process of learning (Zimmerman & Bandura, 1994).

In a number of previous studies, it has been reported that SR is strongly associated with academic achievement. As an example, in the study conducted by Zimmerman and Martinez- Pons (1986) on SR, they reached the conclusion that SR had a significant role in more than 90 percent of the participants' achievements. In the context of Iran, also, the relationship between SR and other variables has been studied. In this vein, Ghanizadeh and

Mirzaee (2012) found a significant correlation between SR and the critical thinking of Iranian EFL learners. In another study, Bajgiran (2013) investigated the influence of Iranian EFL learners' SR capacity on reading comprehension skills. He indicated that there existed a positive relationship between SR of the language learners and their reading comprehension.

Finally, in a large number of previous studies, (e.g., Barkley, 2006; Celik, 2015; Chemens, et al., 2001; Chou, 2007; Coutinho & Neuman, 2008; Gahungu, 2007; Goulão, 2014; Mills, et al., 2007; Nevil, 2008; Shkullaku, 2013; Yusuf, 2011; Wu, 2006) self-efficacy has been shown to have a significant and positive correlation with learner's academic performance and achievement. Bandura (1977) defined self-efficacy as a personal belief in one's own abilities to accomplish a specific activity or task. It is a judgment of confidence about the performance (Lorsbach & Jinks, 1999). Self-efficacious learners devote a high amount of effort in order to meet their needs, and attribute failure to factors which are in their control, rather than to external and irrelevant factors.

Many Ph.D. candidates at IAU struggle to provide an English certificate (usually EPT, or sometimes TOLIMO, MSRT, or even TOEFL/IELTS) by the time they are supposed to take their comprehensive exam. Their Ph.D. program is sometimes prolonged and they have to ask for extensions simply because they cannot meet the requirements of the English certificate they are supposed to submit to the university. This English certificate has become a thorny issue for most (if not all) of them. One way to help these students is to diagnose the factors that could be conducive to their English proficiency. This way, perhaps by fostering those factors, the Ph.D. candidates could cope with the English proficiency test they have to take. To this end, the current proposed study seeks to examine the roles of test-taking strategies, self-regulation strategies, and self-efficacy, in the performances of IAU Ph.D. candidates on their English test (i.e., IAUEPT).

Literature Review

A number of studies have been conducted on test-taking strategies (Anderson, et al., 1991; Block 1992; Purpura 1998; Phakiti 2003; 2008, Barati 2005; Cohen 2010). Barati (2005) for instance assessed test-taking strategies in adult EFL learners. In that study, he employed quantitative and qualitative research in order to examine the effect of test-taking strategies on the learners' reading test performance. The results showed a significant effect of test-taking strategies on the reading skills test performance of all ability groups who participated in that study. Barati, however, suggested that strategies did not always have positive effects on the test takers' performance but rather there were cases where they affected the test results significantly negatively (e.g. test-wiseness). The findings of that study also revealed that test-wiseness strategies were significantly employed by test-takers with low ability more frequently than other ability groups.

Rezaei (2006) examined the possible relationship between the subjects' proficiency level and their tendency in using various types of strategies while taking a test of language proficiency. The findings of the present study reveal that the three groups of students had different approaches towards using test-taking strategies. The advanced students, on the whole, used more strategies in doing the language test than the other two groups. With respect to the elementary students, their total scores in the test and their scores in the various sections of the test did not correlate with their scores in the different types of strategies.

In another study, Salehi (2011) investigated test-taking strategies of 40 Iranian test-takers in the reading section of University of Tehran English Proficiency Test. The purpose was to see if there was any concordance between the type of strategies and the item types in the reading comprehension passages. For instance, if the strategy of guessing was used on

inference items, this would put the validity of the item at risk because there was a mismatch between the purposes of test-makers and those of test-takers (Cohen, 1984). The findings of that study revealed that for most item types the expected strategies were used.

Kashkouli, et al. (2015) examined the test-taking strategies employed to answer the Iranian National University Entrance Exam for MA in TEFL. The findings revealed that from among all participants, the intermediate group used test-taking strategies more than others. The results also showed that monitoring and evaluation were used significantly more than other strategies. Those researchers came to the result that test-takers relied more on their academic reading skills for both specific and general comprehension of the texts rather than on their background knowledge or test-wiseness strategies.

In a more recent study, Singh et al. (2021) showed how ESL students used cognitive, metacognitive, compensating, and social strategies. Participants expressed that understanding and reading the passage allowed them to draw better conclusions in answering the multiple choice questions. The findings revealed that they used a compensation strategy whereby they tried guessing the answers on a number of occasions.

Several other studies have also investigated the effects of test-taking strategies on test performance (Bialystok, 1983; Cohen, 1984; Harris, 2014; Mohammadi & Jafre, 2011; Nevo, 1989; Phakiti, 2008; Pour-Radojevic, 2009). In their study, Nourdad and Ajideh (2019) found that there was a positive relationship between test-taking strategies and reading test performance and that successful, moderately, successful, and unsuccessful test-takers differed in their use of cognitive and metacognitive strategies.

In addition, in a number of previous studies, it has been reported that SR is strongly associated with academic achievement. As an example, in the study conducted by Zimmerman and Martinez-Pons (1986) on SR, they reached the conclusion that SR had a significant role in more than 90 percent of the participants' achievements.

Finally, students with a strong sense of academic self-efficacy have been proven to willingly undertake challenging tasks (Bandura & Schunk, 1981), expend greater effort (Salomon, 1984), show increased persistence in the presence of obstacles (Bandura & Schunk, 1981; Linnenbrink & Pintrich, 2002; Schunk, 1982), show lower anxiety levels (Meece, et al., 1990; Pintrich & DeGroot, 1990), demonstrate flexibility in the use of learning strategies (Bouffard-Bouchard, 1990; Pintrich & DeGroot, 1990), and self-regulate better than other students (Zimmerman, et al., 1992; Zimmerman & Martinez-Pons, 1990). Students with high self-efficacy also often demonstrate accurate self-evaluation of their academic performance and greater intrinsic interest in scholastic matters, and they attain higher intellectual achievement (Bouffard-Bouchard, 1990). Students with low self-efficacy, conversely, may choose to complete only uncomplicated academic tasks to which they exert minimal effort and limited persistence or they may choose to entirely avoid the accomplishment of an academic assignment.

In sum, despite all the studies conducted on test-taking strategies, self-regulation strategies, and self-efficacy, what has gone unnoticed by EFL researchers, especially in the context of Iran, is the roles of these three variables in the language proficiency of Ph.D. candidates at IAU, who have to take EPT as part of the requirement to do their Ph.D. program. The current study, thus, intends to fill this lacuna by studying the roles of those three variables in the language proficiency of the Ph.D. candidates at IAU. Hence, the following research questions were formulated to help achieve the aims of the study:

- 1- Do test-taking strategies, self-regulation strategies, and self-efficacy have a statistically significant combined effect on the language proficiency of IAU Ph.D. candidates?
- 2- Which of the three factors of test-taking strategies, self-regulation strategies, and self-efficacy could be the best predictor of the IAU Ph.D. candidates' language proficiency?

Methods

The description of the methodology that was employed in this study is presented in the following section.

Design of the Study

The present study had an ex post facto design. According to Hatch and Farhady (1986), an ex post facto design is a design in which there is no treatment, yet the effects of existing attributes (i.e., independent variables) on a dependent variable are examined.

Participants

The participants of the study were selected from the Ph.D. candidates studying at IAU, Shahrekord Branch. More than 100 participants from different majors were asked to take part in the study, the returned questionnaires amounted to 98. These male and female participants ranged in age from 25 to 44. They were given a consent form prior to the beginning of the study, and then they took the questionnaires (to be described below). All these participants were Iranian students who had to submit an English certificate to the Bureau of Education of the university as part of the requirement for their Ph.D. program.

Instrumentation

The instruments that were used in the current study comprised the EPT and the test-taking strategies, self-regulation strategies, and self-efficacy. These instruments are described as follows.

English Proficiency Test (EPT)

The EPT (or sometimes called IAUEPT) is an English language proficiency test administered by IAU to the Ph.D. candidates of IAU to ensure their English language proficiency is at a level required for Ph.D. studies. This test comprises 25 vocabulary questions, 40 grammar questions, and 20 reading comprehension questions, and 15 cloze test items, amounting to a total number of 100 questions. The scores are announced out of 100 and a passing score of 50 is assumed for the Ph.D. candidates to meet the requirements of the Ph.D. program. The sample EPT paper used in the current study was shown to have a reliability index of .85, as calculated through the KR-20 formula by the present researchers.

Test-taking Strategies Questionnaire

Finally, a test-taking strategies questionnaire was developed based on Barati's (2005) taxonomy of test-taking strategies, which consists of 27 items each of which presents a statement about the use of a test-taking strategy. According to Barati (2005), from the total of 27 items, 6 items relate to planning strategies, 13 items ask about test takers' use of monitoring strategies, 4 items address evaluation strategies, and 4 items ask about test-wiseness strategy. The test-taking strategy questionnaire was translated into Persian to be in the participants' native language and avoid any ambiguity. This questionnaire had 5-scale Likert items in which 1 = never; 2 = sometimes; 3 = often; 4 = usually, and 5 = always. The participants were asked to mark how frequently they used each strategy. Since the original model is basically focused on reading strategies, some modifications were made to suit various skills tested in the EPT. The reliability of the translated and modified questionnaire was estimated using Cronbach alpha formula (.79) and its validity was checked by three

experts in the field, who examined the questionnaire and suggested some minor modifications in terms of wording for the purpose of clarity. (see Appendix A).

Self-regulation Questionnaire

The self-regulation questionnaire employed in the current study was designed by Buffard (1995) and later standardized by Cadillac (2001). It consists of 14 questions with five options, including 1 (*strongly disagree*), 2 (*disagree*), 3 (*no idea*), 4 (*agree*), and 5 (*strongly agree*). This questionnaire was translated into Persian so the students' responses' reliability would not be affected for reasons of (lack of) L2 proficiency and/or comprehension. The reliability of this translated version of the questionnaire was calculated via Cronbach's Alpha formula and the reliability coefficient of .85 was obtained. (see Appendix B)

Self-efficacy Questionnaire

In order to measure the students' self-efficacy, the self-efficacy subscale of the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich, et al. (1991) was used. The MSLQ is based on a social-cognitive view of motivation and self-regulated learning (Pintrich, 2003). Eight items (#5, #6, #12, #15, #20, #21, #29, and #31) in this scale measure students' self-efficacy for learning and performance. Students rated themselves on a 5-point Likert-type scale, ranging from 1 (*not at all true of me*) to 5 (*completely true of me*). For scoring the scale, all the responses by a student were added up to a sum score. The range was a score from 8 to 40 points. The motive for selecting this instrument is its high index of reliability ($r = .93$, based on Pintrich et al., 1991). The reliability of the Persian translation of this scale was once again measured using the Cronbach's alpha formula and an index of .87 was obtained with the participants in this study. (see Appendix C)

Data Collection Procedures

During the fall term of 2020, more than 100 Ph.D. candidates studying in different majors at IAU Shahrekord Branch were asked to fill out a consent form and take the test-taking strategies questionnaire, self-regulation questionnaire, and self-efficacy questionnaire; however, only 98 candidates accepted to take part in the study. For those willing to take the hard copies of the questionnaires, each questionnaire was given to them in a different session so their answers would not be affected by the boredom that usually builds up if participants are required to take a lot of questionnaires or questionnaire items. Alternatively, those students who were inclined to take the online version of the questionnaires were sent a link to a questionnaire every session and their responses were collected online. This way, after three weeks, the questionnaire data were collected. Regarding their EPT scores, a sample EPT paper was given to them over the last two sessions of the course and their scores were calculated and collected. The researchers then coded the data and prepare them for statistical analysis. In order to analyze them and answer the two research questions of the study, the researchers ran a multiple regression since this statistical test is used to examine the (combined as well as individual) effects of several categorical or continuous independent variables on a continuous dependent variable. Prior to conducting this test, all the assumptions of the test were checked.

Results

The results of the data analysis phase of the study are presented in what follows:

Descriptive Statistics and Relationships

The three independent variables in this study included test-taking strategies, self-regulation-strategies, and self-efficacy, while the dependent variable was language

proficiency. Descriptive statistics regarding these four variables are presented in Table 1 below:

Table 1- *Descriptive Statistics for the Variables Under Examination*

	Mean	Std. Deviation	N
Language Proficiency	52.53	13.98	98
Test-taking Strategies	94.47	10.98	98
Self-regulation Strategies	51.56	11.72	98
Self-efficacy	23.78	5.81	98

The mean scores for language proficiency ($M = 52.53$), test-taking strategies ($M = 94.47$), self-regulation strategies ($M = 51.56$), and self-efficacy ($M = 23.78$) as well as standard deviations and the number of students are displayed in Table 1. In Table 2, the results of Pearson correlation for the binary relationships between language proficiency on the one hand and the other three variables on the other are presented:

Table 2 - *Pearson Correlation Results for the Variables Under Examination*

		Test-taking Strategies	Self-regulation Strategies	Self-efficacy
Language Proficiency	Pearson Correlation	.89	.91	.79
	Sig. (2-tailed)	.00	.00	.00
	N	98	98	98

As is shown in Table 2, the correlation between test-taking strategies and language proficiency was a strong positive one ($r = .89$) since based on Brown (1995), a relationship is weak if it is lower than $\pm .50$, moderate if it falls between $\pm .50$ and $\pm .80$, and strong if it is over $\pm .80$. This strong relationship between test-taking strategies and language proficiency was found to be of statistical significance as the p value in front of the Sig. (2-tailed) row corresponding to this correlation analysis was smaller than the significance level ($p < .05$). In addition, the correlation between self-regulation strategies and language proficiency was a strong positive relationship which was of statistical significance. Finally, self-efficacy and language proficiency were positively and moderately correlated, and the relationship between them reached statistical significance.

Results of the Regression Analysis

A standard multiple regression analysis was conducted to investigate the roles of test-taking strategies, self-regulation strategies, and self-efficacy in English language proficiency of IAU Ph.D. students. Multiple regression was used since there were three independent variables and one dependent variable in the design of the present study. Table 3 presents the results of the model run by multiple regression:

Table 3 - *Model Summary for Multiple Regression*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.95	.91	.91	4.15

In Table 3, the value given under the R Square column shows how much of the variance in English language proficiency is explained by test-taking strategies, self-regulation strategies, and self-efficacy. The value here is .91, which means that test-taking strategies, self-regulation strategies, and self-efficacy accounted for 91 percent of the variance in the English language proficiency scores of the students. To examine the statistical significance of this result, Table 4 had to be consulted:

Table 4.4 - *Statistical Significance of the Multiple Regression Results*

	Sum of Squares	df	Mean Square	F	Sig.
Regression	17355.13	3	5785.04	334.99	.00
Residual	1623.27	94	17.26		
Total	18978.40	97			

In Table 4, the p value under the Sig. column equaled .00, which was smaller than the significance level ($p < .05$), indicating that the model reached statistical significance. In other words, test-taking strategies, self-regulation strategies, and self-efficacy could significantly predict English language proficiency of the IAU Ph.D. students. Now Table 5 should be checked to see which of the independent variables contributed more to the prediction of English language proficiency.

Table 5 - *Predictive Power of Test-taking Strategies, Self-regulation Strategies, and Self-efficacy for Language Proficiency*

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Toleranc e	VIF
(Constant)	-33.30	4.12		-8.07	.00					
Test-taking strategies	.49	.06	.39	7.33	.00	.89	.60	.22	.31	3.14
Self-regulation strategies	.55	.06	.46	8.29	.00	.91	.65	.25	.28	3.46
Self-efficacy	.42	.11	.17	3.78	.00	.79	.36	.11	.42	2.37

To compare the predictive power of test-taking strategies, self-regulation strategies, and self-efficacy, the values under the *Beta* column under standardized coefficients should be checked. Looking down this column, one could notice that the largest value was the one for self-regulation strategies (.46), indicating that self-regulation strategies made the strongest contribution to explaining English language proficiency of the IAU Ph.D. students. The relevant *Beta* value for test-taking strategies could also be seen out there (.39), which was the second highest *Beta* score under this column, indicating that test-taking strategies was the second best predictor of the Ph.D. students' English language proficiency. Lastly, there was self-efficacy with a *Beta* value of .17. All these three independent variables could significantly predict the Ph.D. students' English language proficiency because the p values for these variables under the Sig. column were all smaller than the significance level ($p < .05$).

Discussion

As it was seen above, the results showed that test-taking strategies and self-regulation strategies were strongly, positively, and significantly correlated with language proficiency. It was also revealed that the relationship between self-efficacy and language proficiency was positive, moderate, and statistically significant. Furthermore, the results of standard multiple regression indicated that self-regulation was the best predictor of language proficiency, and test-taking strategies were the second best predictor, followed by self-efficacy as the third best predictors among the above-mentioned factors. In fact, all the three independent variables of test-taking strategies, self-regulation strategies, and self-efficacy were found to be significant predictors of language proficiency.

In line with our findings, there have been other studies that have reported the positive effects of test-taking strategies on different areas of language or different language skills (Anderson, et al., 1991; Block, 1992; Purpura, 1998; Phakiti 2003; 2008, Barati, 2005; Cohen, 2011). In a relevant study, Barati (2005) examined test-taking strategies among adult EFL learners. In agreement with our findings, his results indicated a significant effect of test-taking strategies on the reading skills test performance of all ability groups who participated in that study.

In another very relevant study, Rezaei (2006) investigated whether there is any significant relationship between the subjects' proficiency level and their tendency in using various types of strategies while taking a test of language proficiency. Lending further support to our findings, he also found that a strong correlation existed between the learners' English proficiency and their test-taking strategies. In a more recent study, Kashkouli, et al. (2015) investigated the test-taking strategies employed to answer the Iranian National University Entrance Exam for MA in TEFL. The findings revealed that from among all participants, the intermediate group used test-taking strategies more than others.

There have also been studies in the literature that have examined the effects of test-taking strategies on test performance (Phakiti, 2008; Radojevic, 2009; Pour-Mohammadi & Jafre, 2011; Harris, 2014). A wide range of such studies has directly or indirectly corroborated our findings by concluding that there was a positive relationship between the use of test-taking strategies and test performance. Moreover, it was found that highly successful test-takers considerably used higher test-taking strategies than moderately successful ones. We also found this strong association in our study.

As with the self-efficacy aspect of this study, our findings lend further support to those of other researchers such as Magogwe and Oliver (2007). They conducted a study that sought to explore the relationship between preferred language strategies, age, proficiency, and self-efficacy beliefs. Partially in line with our results, their findings also revealed a dynamic relationship between use of language learning strategies and proficiency, level of schooling (representing age differences) and self-efficacy beliefs. Also, Yilmaz (2010) investigated the English language learning strategies employed by English majors and aimed at exploring the relationship between preferred language strategies, gender, proficiency, and self-efficacy beliefs. Her findings are in line with the findings of our study.

Moreover, Wong (2005) explored graduate pre-service teachers' language learning strategies and language self-efficacy and the relationship between these two constructs. Supporting our current findings, Wong (2005) concluded that there was a significant positive relationship between language learning strategies and language self-efficacy. High self-efficacy subjects reported more frequent use of and a larger number of language learning strategies than did low self-efficacy subjects. A justifiable explanation for such results obtained by others and by us in this study is that self-efficacious learners have a greater potential for employing a wider range of strategies that in turn leads to better test performance.

Additionally, a number of studies on self-regulation have corroborated our findings. For instance, Ghanizadeh and Mirzaee (2012) found a significant correlation between SR and critical thinking of Iranian EFL learners. In another study, Bajgiran (2013) investigated the influence of Iranian EFL learners' SR capacity on reading comprehension skill. In line with our findings, he reported that there existed a positive relationship between SR of the language learners and their reading comprehension.

Rose (2013) investigated how students of the Japanese language regulate the learning of kanji (Japanese written characters). Her results showed an inability for many students to control emotions, manage commitments, and control boredom and procrastination when

studying kanji. Moreover, advanced learners were more prone to a loss of self-regulation due to frustration caused by a lack of progress in learning, or due to self-criticism over an inability to reach goals.

Conclusions

This study aimed to discover whether or not test-taking strategies, self-regulation-strategies, and self-efficacy have a statistically significant combined effect on language proficiency of IAU Ph.D candidates. Moreover, an attempt was made to investigate which of these three factors could be the best predictor of the IAU Ph.D. candidates' language proficiency. The main conclusions drawn from the analysis of data and discussion of the results are as follows:

Firstly, the results indicated that test-taking strategies and self-regulation strategies were strongly, positively, and significantly correlated with language proficiency. It was also found that the relationship between self-efficacy and language proficiency was positive, moderate, and statistically significant. Secondly, the results of regression analysis showed that self-regulation was the best predictor of language proficiency, and test-taking strategies were the second-best predictor, followed by self-efficacy as the third best predictors among the above-mentioned factors. In fact, all the three independent variables of test-taking strategies, self-regulation strategies, and self-efficacy were found to be significant predictors of language proficiency. The aforementioned conclusions reveal that test-taking strategies, self-regulation, and self-efficacy play an important role when it comes to their effects on language proficiency of Iranian IAU Ph.D. candidates. Furthermore, the three variables were found to be strong predictors of language proficiency among the subjects studied in this research.

The findings of the present study have implications for EFL learners, and teachers in the realm of FL and SL teaching/testing in particular and education in general. The major implication for EFL teachers is that they are required to individualize their classroom instruction based on students' levels of tests-taking strategies, self-regulation, and self-efficacy. In fact, EFL teachers are encouraged to incorporate the results of studies like ours into their everyday pedagogical practices. The strong associations found among the three variables under investigation in this study and language proficiency provides sufficient support for that.

Also, EFL/ESL teacher training programs should explicitly and systematically address these pedagogically important constructs of test-taking strategies, self-regulation, and self-efficacy. Teachers should be well prepared, in theory and practice, to train their students to take advantage of these variables, and to help students develop positive attitudes towards the roles played by these constructs in EFL learning.

Moreover, EFL learners in different contexts and at different levels of proficiency are also expected to consider and benefit from the findings of this study. The students must be made aware of the effects of these variables on their proficiency and how these variables can be strong predictors of their language proficiency levels. It should be noted that when learners discover the levels of existence of such factors in themselves and their contributory role to their better learning, they can be more certain about achieving better results. Besides, language test-taking strategies, self-regulation and self-efficacy beliefs should be integrated in EFL/ESL syllabi to be a common practice in EFL/ESL classroom instruction.

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Appendix A. Test-taking Strategies Questionnaire

Test-taking Strategies Questionnaire

Dear Student:

Thank you very much for your contribution to this study. Please write your name (optional), age, and term of study below and then fill this questionnaire.

Name Age Term of study

After taking a test, there are a number of sentences that the test takers may use to describe how they answered the questions and what processes or strategies they used. What did you do? What were your strategies in answering the items in today's tests? Please read the following strategies and choose your answers from the given (1-5) scale: 1(never), 2(sometimes), 3(often), 4(usually), and 5(always).

What you did during the test	1	2	3	4	5
	(never)	(sometimes)	(often)	(usually)	(always)
1. I was aware of the need to plan a course of action.					
2. Before beginning the test, I tried to identify easy and difficult parts of the test.					
3. Before I started the test I decided to leave difficult questions for later.					
4. I looked for the points for each sub-test before starting the test.					
5. I looked for the sub-tests which I thought were more important before starting the test.					
6. I read the test items before reading the texts in each section to search for their answers in the text.					
7. I answered shorter text's items before longer ones.					
8. Before answering the items, I planned how to complete the test and followed my plan throughout.					
9. I made short notes and underlined main ideas while completing the test.					
10. I translated the texts and the items into Persian.					
11. I spent more time on difficult questions.					
12. I read the texts and questions several times.					
13. I thought carefully about the meaning of the test items before answering them.					
14. I used my background knowledge to answer the questions.					
15. During the test, I was well aware of what I was doing and how I was doing it.					
16. I checked my answers to previous questions while completing the test.					
17. I corrected my mistakes immediately after I found them.					
18. To find clues to the responses I did not know, I asked the tutor for clarification.					
19. At any time during the test, I was aware of how much of the test remained to be completed.					
20. I tried to understand the questions very well before attempting to answer them.					
21. I answered some items by finding clues in other items.					
22. If no choice (in multiple-choice items) appeared correct to me, I had a pre-determined choice to mark.					
23. I made sure I understood what had to be done and how I was to do it.					
24. I carefully watched my progress to complete the test on time.					
25. I checked the accuracy of my responses as I progressed through the test.					
26. At the end of the test, I answered the unanswered items randomly (without referring to the texts).					
27. I carefully checked my answers before submitting the test.					

Appendix B. Self-regulation Questionnaire

لطفاً نظر خود را در خصوص جملات زیر با درج علامت مقابل گزینه مناسب ثبت کنید.

با سپاس از همکاری شما

کاملاً مخالف	مخالف	نظری ندارم	موافق	کاملاً موافق	گروه ها
					۱- برای برنامه ریزی زمان مطالعه وقت صرف می کنم.
					۲- زمانی که مطالعه می کنم اهداف خود را دقیقاً بررسی می کنم.
					۳- وقتی در حال مطالعه هستم سعی می کنم بین مطالب ارائه شده در کلاس و مطالب کتاب ارتباط برقرار کنم.
					۴- وقتی مشغول درس خواندن هستم بیش از آنکه فقط ماده درسی را بخوانم سعی می کنم مشخص کنم که چه چیزی از درس یاد می گیرم.
					۵- زمانی که مطالب یا کارهای درخواست شده مشکل هستند ، با از خواندن آن ها صرف نظر می کنم یا فقط قسمت های آسان آن را مطالعه می کنم.
					۶- من قادرم حتی مواقعی که مطالب درسی برایم جالب نیستند کارها و تکالیف ضروری را انجام دهم.
					۷- من روش های خاصی را برای خلاصه کردن مطالب درسی به کار می برم.
					۸- غالب اوقات تا آخرین دقیقه که وقت دارم مشغول خواندن مطالب برای امتحان هستم.
					۹- سعی می کنم بین آنچه که در حال مطالعه آن هستم و آن چیزهایی که از قبل می دانستم پیوند برقرار کنم.
					۱۰- گاهی اوقات هنگام درس خواندن مکث می کنم تا بفهمم چگونه بخش های مختلف درس را باهم ارتباط دهم.
					۱۱- من ساعات خاصی را برای امتحان در نظر گرفته ام.
					۱۲- در موقع درس خواندن مسائل تمرین های مختلف را حل می کنم یا سوالات متعددی از درس بیرون می کشم و به آن ها جواب می دهم.
					۱۳- یادگیری از طریق حفظ کردن بهترین وسیله ای است که من برای آمادگی یک امتحان می شناسم.
					۱۴- زمانی که یک مطلب را نمی فهمم نمی دانم چگونه خودم را از مضمون نجات دهم.

Appendix C. Self-efficacy Questionnaire

Directions: Read the following statements and decide the extent to which you agree or disagree with them by checking your response in the correct table.

Statements	Strongly Agree	Agree	No Idea	Disagree	Strongly Disagree
1. I believe I will receive an excellent grade in this class.					
2. I'm certain I can understand the most difficult material presented in the readings for this course.					
3. I'm confident I can learn the basic concepts taught in this course.					
4. I'm confident I can understand the most complex material presented by the instructor in this course.					
5. I'm confident I can do an excellent job on the assignments and tests in this course.					
6. I expect to do well in this class.					
7. I'm certain I can master the skills being taught in this class.					
8. Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.					