Prediction of Iranian EFL Learners' Reading Comprehension Ability by Critical Thinking, Intelligence, and Language Aptitude[1]

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Abstract

Critical thinking, intelligence, and language aptitude are three cognitive factors, each, in its own way, influencing our lives. They are important in successful reasoning, problem-solving, and foreign language learning, and thus are worth studying regarding their influence on individuals' language-related skills, in particular, foreign language-related skills. This study used a correlational design to investigate how well the set of variables of critical thinking, intelligence, and language aptitude can predict Iranian EFL learners' reading comprehension ability, and to see which variable in this set was the best predictor. Additionally, the study explored whether the set could predict these learners' reading comprehension ability differently depending on their language proficiency. Fifty-seven university students majoring in English took part in this study. They were sixth- and seventh-semester undergraduate students at the University of Sistan and Baluchestan, and Farhangian University of Zahedan, Iran. The data were collected through an Oxford Placement Test, a Watson-Glaser Appraisal, the Wechsler Adult Intelligence Scale-Revised, The Colleges of Oxford University Classics Language Aptitude Test, and the reading comprehension section of a Michigan language proficiency test. Statistical analysis revealed that critical thinking, intelligence, and language aptitude allowed us to predict the participants' reading comprehension ability by as much as 83%. Language aptitude, with a unique contribution of 63% was the best predictor of the three. The results also showed that the predictive difference between the participants with high language proficiency and that of participants with low language proficiency was not statistically significant.

Resumen

El pensamiento crítico, la inteligencia y la aptitud lingüística son tres factores cognitivos que, cada uno a su manera, influyen en nuestras vidas. Son importantes para el razonamiento, la resolución de problemas y el aprendizaje de idiomas extranjeros exitosos, y por tanto vale la pena estudiar su influencia en las habilidades relacionadas con el lenguaje de los individuos, en particular, las habilidades relacionadas con el idioma extranjero. Este estudio utilizó un diseño correlacional para investigar qué tan bien el conjunto de variables de pensamiento crítico, inteligencia y aptitud lingüística puede predecir la capacidad de comprensión de lectura de los estudiantes iraníes de ILE, y para ver qué variable en este conjunto fue el mejor predictor. Además, el estudio exploró si el conjunto podría predecir la capacidad de comprensión de lectura de estos estudiantes de manera diferente según su dominio del idioma. Cincuenta y siete estudiantes universitarios de la carrera de inglés participaron en este estudio. Eran estudiantes de pregrado de sexto y séptimo semestre en la Universidad de Sistán y Baluchistán, y en la Universidad Farhangian de Zahedan, Irán. Los datos se recopilaron a través de una prueba de ubicación de Oxford, una evaluación de Watson-Glaser, la escala revisada de inteligencia para adultos de Wechsler, la prueba de aptitud lingüística clásica de The Colleges of Oxford University y la sección de comprensión de lectura de una prueba de dominio del idioma de Michigan. El análisis estadístico reveló que el pensamiento crítico, la inteligencia y la aptitud lingüística nos permitieron predecir la capacidad de comprensión de lectura de los participantes hasta en un 83 %. La aptitud lingüística, con una contribución única del 63% fue el mejor predictor de los tres. Los resultados también mostraron que la diferencia predictiva entre los participantes con alto dominio del idioma y la de los participantes con bajo dominio del idioma no fue estadísticamente significativa.

Introduction

Reading comprehension ability is an integral part of an educational life since the comprehension of large number of texts in school and university is very important to achieve the educational and academic goals. Besides, reading in a second language (L2) is a necessity for many students wanting to engage in advanced studies, get a better job, travel, gain access to information, become more cross-culturally aware, communicate with others, or be entertained (Grabe, 2009). Hence, it is worth investigating the factors that contribute to the development of English as a Foreign Language (EFL) reading comprehension ability. Different models could be used to examine the predictive factors that influence EFL reading comprehension ability. Among these models could be those with reader-related components as the role of the reader is highlighted such as in Harris and Hodges' (1995) definition of reading comprehension ability as "the construction of the meaning of a written text through a reciprocal interchange of ideas between the reader and the message in a particular text" (p. 39) and Pardo's (2004) definition of this ability as "a process in which readers construct meaning by interacting with text through the combination of prior knowledge and

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previous experience, information in the text, and the stance the reader takes in relationship to the text" (p. 272).

Cognitive reader-related factors could strongly predict EFL reading comprehension ability. A large body of research has examined various cognitive factors such as critical thinking (Bagheri & Ghanizadeh, 2016; Ghanizadeh et al., 2017; Hosseini et al., 2012; Yazdanipour & Mall-Amiri, 2018), intelligence (Barzegar et al., 2011; Khaghaninejad et al., 2017; KhaliliSabet & Mesbah Kiaee, 2016; Motallebzadeh & Tabatabaee Yazdi, 2016; Nemat Tabrizi, 2016; Nugraheni & Nuardi, 2018; Sadeghi et al., 2019; Tabatabaee-Yazdi & Baghaei, 2018; Utami, 2021; Vahdat & Khavandgaran, 2013; Zahedi & Mottaghi Moghaddam, 2016; Zaini, 2019), language aptitude (Shahnazari-Dorcheh & Adams, 2014), working memory (Casaponsa et al., 2015; Ghazanfar & Farvardin, 2015; Han, 2017; Shen & Park, 2018), and higher level comprehension skills (Srisang & Everatt, 2021; Youn, 2016) as predictors of EFL reading comprehension ability. The present study is part of this body. It is based on the results of previous studies which have identified critical thinking (Hosseini et al., 2012; Ghanizadeh et al., 2017), intelligence (Vahdat & Khavandgaran, 2013; Motallebzadeh &Tabatabaee Yazdi, 2016), and language aptitude (Shahnazari-Dorcheh & Adams, 2014) as predictive of EFL reading comprehension ability. Indeed, it is a continuation of such studies and tries to examine whether critical thinking, intelligence, and language aptitude could be components of a model for predicting EFL reading comprehension ability. Moreover, the study aims at filling a gap in the relevant literature regarding the prediction of EFL reading comprehension ability. Therefore, the researchers used a full-cognitive model, consisting of more than one type of cognitive ability, with the unique contribution of each, and compared across language proficiency levels. Critical thinking is "reasonable, reflective thinking that is focused on deciding what to believe or do" (Norris & Ennis, 1989, pp.175-176); intelligence is "the aggregate or global capacity of the individual to act purposely, to think rationally and deal effectively with his environment" (Wechsler, 1944, p.4), and language aptitude is "predictive of how well, relative to other individuals, an individual can learn a foreign language in a given amount of time and under given condition" (Carroll & Sapon, 2002, p.23).

This study combined these three factors together to try to determine the degree to which the set is predictive of Iranian EFL learners' reading comprehension ability. It also examined which of these factors was the best predictor of their reading comprehension ability. Moreover, it explored whether language proficiency influences the predictive power of the set of variables about these students' reading comprehension ability. To achieve these aims, the study sought to answer the following research questions:

1. How did the set of variables of critical thinking, intelligence, and language aptitude predict Iranian EFL learners' reading comprehension ability?
2. Which variable in the set of variables of critical thinking, intelligence, and language aptitude was the best predictor of Iranian EFL learners' reading comprehension ability?
3. Did the set of variables of critical thinking, intelligence, and language aptitude predict Iranian EFL learners' reading comprehension ability differently regarding Iranian EFL learners with low and high language proficiency?

Literature Review

Grabe (2009) viewed reading comprehension as a wide model, consisting of several component processes. He divided those processes into two categories: lower-level processes including word recognition, syntactic parsing, and meaning encoding as propositions, and higher-level processes including a text model of reader comprehension (connecting new propositions to a network of already active propositional ideas), a situation model of reader interpretation (bringing the reader's understanding of the discourse, past instances of reading similar types of texts and the knowledge gifted from those instances, the reader's attitudes toward the text, the author, the emerging situation, the genre, and so on), and a set of reading skills and resources under the command of the executive control mechanism in working memory (attention processing (inference, problem-solving, monitoring, goal setting, shifting goals, resolving anaphor ambiguity, etc.), inhibiting irrelevant or no-longer needed information, shifting attention intentionally, and updating working-memory information). According to this model, processes regarding reading comprehension seem to range from processes dealing with the surface structures of the text to those mediating the content of the mind and the surface structure of the text, to those specific to working memory which may be exploited for any human activity. According to the above-mentioned model, reading comprehension ability is built of many different cognitive, reader-related factors. The present study is based on this assumption that reading comprehension ability depends on critical thinking, intelligence, and language aptitude as three cognitive, reader-related constructs, simplifying the complexity of this comprehensive model and, creating a simpler

model for predicting reading comprehension ability. The constructs incorporated into the model have been shown to be predictive of EFL reading comprehension ability in the relevant literature.

On the contribution of critical thinking to EFL reading comprehension ability, Hosseini et al.'s (2012) study explored the role of critical thinking and reading strategies in the reading comprehension ability of Iranian EFL learners. Seventy university students majoring in English language participated in this study. The results showed that critical thinking had a unique contribution of about 85% to reading comprehension ability.

Similarly, Ghanizadeh et al.'s (2017) study examined the predictive power of two indices of critical thinking—inference making and evaluation of arguments—about reading comprehension. One hundred-seven Iranian IELTS candidates participated in this study. The results indicated that, inference making and evaluation of arguments, together, predicted reading comprehension ability by as much as about 10%.

The contribution of intelligence to EFL reading comprehension ability has also been examined in some studies. For instance, Vahdat and Khavandgaran (2013) carried out a study on the relationship between verbal/linguistic intelligence and emotional intelligence, and reading comprehension. Sixty Iranian undergraduate students attending TOEFL classes participated in this study. The results indicated that the two intelligence indices, together, predicted reading comprehension ability of the participants as much as 10%. However, the unique contributions of each intelligence index predicted reading comprehension ability to a more acceptable degree. Linguistic intelligence showed a unique contribution of 32% and emotional intelligence showed a unique contribution of 26% to reading comprehension ability.

Likewise, Motallebzadeh and Tabatabaee Yazdi (2016) examined the relationship of fluid intelligence, crystallized intelligence, and speed of processing with reading comprehension ability. Eighty-four undergraduate students in English participated in this study. The results showed that fluid intelligence predicted reading comprehension ability as much as about 25%. However, the rest of the predictors did not predict reading comprehension at a statistically significant level.

The contribution of language aptitude to EFL reading comprehension ability was not covered fully in the relevant literature. However, there are a number of studies which examine the contribution of working memory—considered, according to Hi-lab model for language aptitude, as a great component of language aptitude (Doughty et al., 2010)—to reading comprehension. For instance, Shahnazari-Dorcheh and Adams' (2014) study explored the role of working memory capacity in reading comprehension ability of fifty-five Persian EFL learners from a private language school. The results indicated that working memory capacity had a contribution of about 26% to reading comprehension ability of the participants at the beginning level of English language proficiency.

Moreover, Shen and Park (2018) explored the effects of meta-cognitive strategies, working memory capacity, and syntactic awareness on Chinese EFL learners' reading comprehension. The participants were 167 college students between 19 and 21 years of age. The results showed that working memory was predictive of the participants' reading comprehension ability by as much as around 24%.

Moreover, a number of studies in the relevant literature showed that language aptitude may be worth examining as a predictor of EFL reading comprehension ability. Such a conclusion may be supported by the results of some studies that have shown the relationship between language aptitude and reading comprehension ability. For example, in Ehrman and Oxford's (1995) study in the Foreign Service Institute (FSI) context where the Modern Language Aptitude Test (MLAT) was first trialed, the MLAT score correlated with reading by as much as 0.50. Furthermore, this conclusion is supported by the results of a study conducted by Erçetin and Alptekin (2012), which showed a positive correlation of 0.31 between working memory and the reading comprehension ability among fifty-one Turkish university students enrolled in an English-medium university.

Method

Research Design

The present research used a correlational design to investigate the extent and the direction of the relationship between some variables (Ary et al., 2019). It is based on a predictive application of correlational research in which the independent (predictor) variable is examined regarding its prediction about the dependent variable (Ary et al., 2019). In the present research, independent variables are critical thinking, intelligence, and language aptitude, and the dependent variable is reading comprehension ability.

Participants

The participants of this study were 47 female and ten male English major university students. The students who took part in this study were sixth- and seventh-semester undergraduate students majoring in English language teaching (N=36), English language and literature (N=9), and English language translation (N=12) at University of Sistan and Baluchestan and Farhangian University of Zahedan, Iran. The age range of the participants was from 21 to 30. They were selected on the basis of a convenience sampling approach. To justify the sample size and the sampling approach, a few points are notable. The nature of the data gathering instruments required the participants to take part in the study under supervision. On the other hand, the researchers were limited regarding providing a specific location for gathering participants to be supervised. Therefore, they selected university campuses as locations for administrating the study and selected the sample from the students at those universities—meaning to do a convenience sampling. The sample was easily gathered and the tests were administered under proper supervision. However, again, the researchers were in limitation regarding doing the study at more than two universities. This convinced the researchers of the number of the participants. Informed consent was obtained from the participants before they entered the study, in such a way that the researchers explained the terms of the research to the participants orally. Next, the participants reflected on the terms and then they agreed to the terms and gave consent orally.

Materials and Instruments

Oxford Placement Test

Version 1 of an Oxford Quick Placement Test (2001) was used to measure the participants' English language proficiency. This test consisted of 60 multiple-choice items assessing vocabulary and grammar knowledge.

Watson-Glaser Appraisal

The participants' critical thinking skill was measured through a Watson-Glaser Appraisal (AssessmentDay Ltd., n.d.). This appraisal measured the ability to analyze, reason, interpret and draw logical conclusions from written information. It consisted of 40 multiple choice questions across five parts of inferences, assumptions, deductions, interpreting information and arguments each of which measured a particular dimension of critical thinking ability. It provided some statements for each part, then asked some multiple-choice questions based on each statement.

Wechsler Adult Intelligence Scale-Revised

The verbal comprehension index of a Persian version of Wechsler Adult Intelligence Scale-Revised (WAIS-R) (1955) was used to measure the participants' intelligence. It consisted of comprehension, information, vocabulary, and similarities sections. The information section included general knowledge questions. The vocabulary section asked the participants to define the words presented to them. The similarities section asked the participants to describe how the words or concepts presented to them were similar. The comprehension section consisted of questions about social situations or common concepts. All of the questions were open-ended.

The Colleges of Oxford University Classics Language Aptitude Test

The language aptitude test used to measure the participants' language aptitude was the Colleges of Oxford University Classics Language Aptitude Test (2018). This test assessed the ability to analyze how languages work, in a way which did not depend on one's knowledge of any particular language. It consisted of twelve questions across three parts assessing morphology, translation, and vocabulary and syntax.

The reading comprehension section of a Michigan language proficiency test

The reading comprehension section of a C Sample Test version of an ECPE (Examination for the Certificate of Proficiency in English) (2017) was used to measure the participants' reading comprehension ability. This test consisted of four passages, each of which was followed by five multiple-choice questions assessing the passages comprehension.

Instruments' validity and reliability

To check the validity, the instruments of the study were chosen among relevant well-known, standard tests. The reliability of the instruments used in the present study was also calculated using Cronbach's Alpha measure. To obtain the reliability of each test, the information regarding the number of the item on the test, the sum of the variances of the item scores, and the variance of the test scores were put in the right side of the formula below (Ary et al., 2019, p.110):

$$\propto = \left(\frac{K}{K-1}\right)\left(\frac{S_x^2 \sum S_i^2}{S_x^2}\right)$$

where $\propto$ is the value of Cronbach's Alpha measure that is the reliability coefficient, *K* is the number of the items on the test, $\sum S_i^2$ is sum of the variances of the item scores, and S_x^2 is the variance of the test scores. The reliability coefficients are presented in the Table below.

Instruments	Cronbach's Alpha
Oxford Quick Placement Test	0.8
Watson-Glaser Appraisal	0.73
Wechsler Adult Intelligence Scale-Revised	0.78
The Colleges of Oxford University Classics Language Aptitude Test	0.75
The reading comprehension section of a Michigan language proficiency test	0.82

Table 1: The reliability of the instruments

The value of a Cronbach's Alfa can be within the range of 0 to 1. A value above 0.7 represents an acceptable reliability (Pallant, 2013). Based on this rule and according to the column "Cronbach's Alpha" of Table 1, the instruments of the present study had acceptable degrees of reliability.

Procedure

First, the participants were required to take the Oxford Placement Test in thirty minutes. Next, they took the Watson-Glaser critical thinking appraisal. The time allocated for this test was twenty minutes. Then they took the College of Oxford University Language Aptitude Test in one hour. After that, they were interviewed with the Wechsler Intelligence Test one by one, each of them allotted around 45 minutes. Finally, the reading section of the Michigan proficiency test was administered to them in 35 minutes. All these tests were administered in separate sessions.

Data Analysis

After collecting the data, they were analyzed through the Statistical Package for Social Sciences (SPSS), version 16.0. To analyze the data related to the first and the second research questions, standard multiple regression was performed. To analyze the data related to the third research question, standard multiple regression was also performed twice. Then, Fisher's Z formula was to be used to find the statistical significance of the difference between the predictive powers the predictor set might show for the two groups of participants (regarding English language proficiency).

Results

Table 2 shows the descriptive statistics of the variables of the study.

Test	N	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Reading comprehension	57	2.00	18.00	9.78	3.86	0.08	-0.64
Critical thinking	57	7.00	21.00	14.49	3.18	-0.11	-0.58
Intelligence	57	40.00	111.00	74.63	16.56	-0.03	0.02
Language aptitude	57	14.00	64.00	38.49	11.42	-0.09	-0.47

Table 2: Descriptive statistics for reading comprehension, critical thinking, intelligence, and language aptitude

To answer the first research question (*How did the set of variables of critical thinking, intelligence, and language aptitude predict Iranian EFL learners' reading comprehension ability?*), a standard multiple regression was used. The result is shown in Table 3. The column "R Square" of the table shows the predictive power of the set of the independent variables of critical thinking, intelligence, and language aptitude about the dependent variable of reading comprehension. However, considering the small size of the sample, the value under column "Adjusted R Square" is reported as the predictive power of the mentioned predictor set. This value indicates that about 83% of the variation in reading comprehension ability is accounted for by the predictor set. The statistical significance of this value can be extracted from Table 4, under the column "Sig.". For the value to be statistically significant, the value under "Sig" column should have been smaller than 0.05. Given this criterion and according to the data presented in Table 4, the predictive value was statistically significant.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
RCIL	0.915	0.836	0.827	1.60821

Table 3: Model summary

Model	Sum of squares	Df	Mean square	F	Sig.
Regression	700.398	3	233.466	90.269	0.000
Residual	137.075	53	2.586		
Total	837.474	56			

Table 4: *ANOVA*

The answer to the second research question (*Which variable in the set of variables of critical thinking, intelligence, and language aptitude is the best predictor of Iranian EFL learners' reading comprehension ability*?) could be provided by the information about the unique contribution of each independent variable to the variation in the dependent one, which was given by the application of standard multiple regression. The unique contribution amounts are stated in Table 5 under the column "Beta".

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
Constant	-6.356	1.128		-5.636	0.000
Critical thinking	0.245	0.090	0.202	2.715	0.009
Intelligence	0.058	0.016	0.248	3.615	0.001
Language aptitude	0.215	0.023	0.635	9.434	0.000

Table 5: Coefficients

According to Table 5, the unique contributions of critical thinking, intelligence, and language aptitude are 20%, about 25%, and 63%, respectively. According to these results, among the three independent variables, language aptitude seems to be the best predictor of reading comprehension ability. The statistical significance of the unique contributions can be extracted from the column "Sig" of the Table 5 above. For each of the contributions to be statistically significant, the value at the intersection of the independent variable-related row and the "sig" column has been assumed to be smaller than 0.05. The table's information shows that this assumption is met.

To answer the third research question (*Did the set of variables of critical thinking, intelligence, and language aptitude predict Iranian EFL learners' reading comprehension ability differently regarding Iranian EFL learners with low and high language proficiency?),* the results of the application of standard multiple regression once for the learners with low language proficiency and once for the learners with high language proficiency were considered. Table 6 and Table 7 below show the predictive power of the predictor set of the study about reading comprehension for the group of learners with low language proficiency level and for the group of learners with high language proficiency level, respectively.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
RCIL	0.867	0.752	0.722	1.29921

Table 6: Model summary for the group of learners with low language proficiency

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
RCIL	0.820	0.672	0.631	1.59057

Table 7: Model summary for the group of learners with high language proficiency

According to the columns labelled "Adjusted R Square", the predictor set showed a predictive power of 72% for the learners with low language proficiency, and a predictive power of 63% for the learners with high language proficiency.

To test the statistical significance of the difference between the two predictive powers, a Fisher's Z formula was applied. For the result of the formula to be statistically significant, it is assumed not to be between -1.96 and +1.96. The result of applying the formula was 0.59. This value is within the above-mentioned interval, and, therefore, it does not show a statistically significant difference.

Discussion

The findings of the current study revealed that the set of variables of critical thinking, intelligence, and language aptitude predicted Iranian EFL learners' reading comprehension ability with a positive, significant value of R=83%, $p<0.05$. This indicated that critical thinking, intelligence, and language aptitude of the participants, together in a set, may make a strong contribution to reading comprehension ability. This, in turn, may indicate that those learners who think more critically, are more intelligent, and have higher levels of language aptitude, will give themselves a greater chance of better comprehending the English texts. This may be in line with Kintsch and Rawson's (2005) and Grabe's (2009) views to reading comprehension as

not only influenced by linguistic knowledge and skills, but also influenced by the power of invisible cognitive factors going beyond the text. The predictive power of the predictor set of the study is comparable with those of some other studies—each, more or less, dealing with a problem similar to that of the present study. For example, the predictor set of a study conducted by Shahnazari-Dorcheh & Adams (2014), consisting of working memory—which, according to the Hi-lab model for language aptitude, is considered as a great component of language aptitude (Doughty et al., 2010)—predicted about 26% variation in reading comprehension ability of Persian EFL learners who were at the beginning level of English language proficiency. Additionally, the predictor set of Vahdat and Khavandgaran's (2013) study, consisting of verbal intelligence and emotional intelligence, was predictive as much as 10% of reading comprehension ability of Iranian undergraduate students attending TOEFL classes. Moreover, the predictor set of Motallebzadeh and TabatabaeeYazdi's (2016) study, consisting of visual-spatial working memory (an index of Raven intelligence test), crystallized intelligence, and processing speed, predicted reading comprehension ability of Iranian EFL undergraduate students as much as 14%. Furthermore, the predictor set of Ghanizadeh et al.'s (2017) study, consisting of two measures of critical thinking—inference making and evaluation of arguments—was predictive of reading comprehension ability of Iranian IELTS candidates as much as 10%.

The predictor set of the present study seems more powerful than all of the above-mentioned studies. However, such superiority may only be true regarding the specific methodology of the study. Given all this, the predictor set may be worth further examining in studies with similar aims to but different methodologies from the present study. In such a way, it could be in competition with the powerful predictor set of another study conducted by Hosseini et al. (2012), including critical thinking and some measures of reading strategy, which predicted Iranian English university students' reading comprehension ability as much as about 84%. However, the difference between two predictor sets regarding the nature of the consisting elements should be kept in mind.

Regarding the second research question, the findings showed that language aptitude, with a beta value of 63%, had the highest unique contribution, among all the members of the predictor set, to reading comprehension ability. The other predictors, intelligence and critical thinking, had unique contributions of about 25% and 20%, respectively. This, in turn, showed that those Iranian EFL learners who are gifted with a more share of language aptitude will probably be more successful in reading comprehension. Indeed, language aptitude is closely related to language learning that, as indicated by Carroll and Sapon (1959), if the learner's aptitude score is very low, the learner may not succeed in any event in an academic language course. This can also be found in Skehan (2016), who believed that language aptitude as consisting of components effectively linked to various SLA developmental stages and their associated cognitive processes.

Relevant research revealed few results related to the prediction of reading comprehension ability by language aptitude in the form of its whole structure. These findings along with the results of the study may suggest that language aptitude, in the form of its whole structure, is worth to be further investigated regarding the prediction of reading comprehension ability with different methodologies from that of the present study. The necessity for applying such a suggestion may be evidenced by the results of some similar studies which report working memory as a much less predictive factor about EFL reading comprehension ability than language aptitude—in the form of its whole structure—in the present study. For instance, the results of the study conducted by Shahnazari-Dorcheh & Adams (2014) reported the predictive power of working memory capacity about reading comprehension ability of beginner EFL learners as much as around 26%. The results of a study conducted by Han (2017) also reported the predictive power of working memory capacity to EFL reading comprehension of non-English major undergraduates as much as 2%. However, when doing such comparisons, certain and possible methodological differences among the studies, which might have influenced the results, should be kept in mind. These findings concluded that language aptitude, in the form of its whole structure, may be an alternative to working memory when examining the contribution of language aptitude to EFL reading comprehension ability.

To answer the third research question, it was found that the predictor set had a predictive power of 72% for the group of the learners with low language proficiency, and a predictive power of 63% for the group of the learners with high language proficiency. The difference between these two values was also shown to be statistically non-significant, offering that the predictor set of the study does not predict Iranian EFL learners' reading comprehension ability differently regarding Iranian EFL learners with low and high language proficiency. However, language proficiency level might contribute to predictions of this kind. To illustrate more, the results of a study conducted by Ghazanfar and Farvardin (2015) are notable. They reported the predictive power of phonological memory—a part of working memory—about reading comprehension ability

of Iranian EFL freshmen and senior students differently regarding elementary-level and low-intermediate-level of language proficiency. The predictive powers were shown to be 28% and 62% for the elementary-level learners and the lower-intermediate-level learners, respectively. The role of language proficiency is also evident, though partially, by the results of a study conducted by Khaghaninejad et al. (2017), which showed that the emotional quotient (EQ)[5] and the intelligence quotient (IQ)[6] were in relationship with reading comprehension ability of Iranian EFL learners of a language center differently regarding language proficiency level. This study showed that EQ was in relationship with the intermediate-level learners' and the advanced-level learners' reading comprehension ability as much as 37% and 51%, respectively. It also showed that IQ was in relationship with the intermediate-level learners' and the advanced-level learners' reading comprehension ability as much as 58% and 62%, respectively.

The researchers attributed the statistically non-significant results to the small number of participants of this study or the selection of the sample. Therefore, the results might have been statistically significant if the sample was larger or selected randomly. This, in turn, would help the results to be more illustrating whether language proficiency matters in the prediction power of the predictor set of the present study.

Conclusion

The results of the present study imply that the more the learners think critically, are intelligent, and are gifted with language aptitude, the better they are in EFL reading comprehension. This also implies that personal characteristics of learners may have an important role in EFL reading comprehension ability and, therefore, teaching EFL reading comprehension is not the only factor intervening to effectively acquiring this ability. The results also imply that critical thinking, intelligence, and language aptitude function independently of language proficiency level in relation to EFL reading comprehension ability.

Considering the limited number of the participants and their limited academic level, similar studies are recommended to examine the topic with a sample of participants who are selected from some universities in different parts of Iran or are at different educational or academic levels. It is also recommended to predict EFL reading comprehension ability by the subcomponents of critical thinking, intelligence, and language aptitude. Moreover, the prediction of other language skills—speaking, listening, and writing—the sub-skills of language skills, or the learning of language components—grammar, pronunciation, or vocabulary—by critical thinking, intelligence, and language aptitude is suggested.

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[5] The emotional quotient is your ability to sense emotions in others and in oneself.

[6] The intelligence quotient measures what people know and how they rapidly they can solve problems.

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