

The Relationship among Comparing and Connecting Thinking Dispositions, Reading Comprehension and Writing Ability of Iranian EFL Learners

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Abstract – The present study was an attempt to investigate the relationship among comparing and connecting thinking dispositions, reading comprehension and writing ability of Iranian EFL learners. To meet this aim, 150 Iranian EFL learners studying English at Mojtaba Fanie Tehran Language Institute in Tehran, Iran were selected. They took Oxford Quick Placement Test (OQPT) and 100 intermediate levels were randomly selected to participate in this research. Then, the learners took the comparing and connecting thinking dispositions questionnaire. After that, writing and reading sections of a preliminary English test (PET) were administered to all participants in order to measure the learners' writing and reading ability. At last, several statistical tests such as Spearman, Pearson correlation, and Regression analysis were run to analyze the data. The results revealed that there was significant relationship between EFL learners' thinking disposition and their reading comprehension and writing ability. Moreover, EFL learners' thinking disposition did significantly predict their reading comprehension and writing ability.

Keywords: thinking dispositions, comparing and connecting thinking dispositions, reading comprehension, writing ability

1. INTRODUCTION

To think critically means to act effectively in the changing world of the 21st century. Critical thinking skills are considered as the important issues in second/foreign language learning. The ability to think critically is important among students in higher education as the content of education at this level requires higher order thinking such as the ability to apply critical evaluation, give evidence for their opinions, and argue the validity of facts they receive from teachers (Halvorsen, 2005). Halvorsen (2005) defines critical thinking as “to think critically about an issue is to consider that issue from various perspectives, to look at and challenge any possible assumptions that may underlie the issue and to explore its possible alternative” (p. 1). According to Richards and Schmidt (2010), critical thinking is “a level of reading comprehension or discussion skills when the learner is able to question and evaluate what is read or heard. In language teaching this is said to engage students more actively with materials in the target language, encourage a deeper processing of it, and show respect for students as independent thinkers” (p. 147). Facione (1990) defines critical thinking as “purposeful, self-regulatory judgment which results in the interpretation, analysis, evaluation, and inference as well as the explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which judgment is based” (p. 2). Moreover, critical thinking is

defined as “a reasoned, purposive, and introspective approach to solving problems or addressing questions with incomplete evidence and information for which an incontrovertible solution is unlikely” (Rudd, Baker, & Hoover, 2000, p. 5). Critical thinking disposition has been characterized as the consistent internal motivation to engage problems and make decisions by using critical thinking (Facione, Facione, & Giancarlo, 1996). Disposition refers to a habit or tendency an individual has toward critical thinking. Facione (1990) refers to the dispositions as “characterizations of good critical thinkers” (p. 11).

The main skills in the process of language learning as a second/foreign, reading has a special position. According to Grabe (2009), “reading can simply be defined as a complex ability to extract, or build, meaning from a text. However, this definition, by itself, is not very informative. The most commonly accepted way for researchers to explain the above definition is to identify the key component abilities and skills that allow reading comprehension to emerge ” (p. 8). According to Richards and Schmidt (2010), reading is defined as “the processes by which the meaning of a written text is understood ” (p. 483). Reading comprehension involves abilities to recognize words rapidly and efficiently, develop and use a very large recognition vocabulary, process sentences in order to build comprehension, engage a range of strategic processes and underlying cognitive skills (e.g., setting goals, changing goals flexibly, monitoring comprehension), interpret meaning in relation to background knowledge, interpret and evaluate texts in line with reader goals and purposes, and process texts fluently over an extended period of time. These processes and knowledge resources allow the reader to generate text comprehension to the level required (Richards & Schmidt, 2010).

Another important main skill in the process of second/foreign language learning is writing. Writing ability is one of the major elements in language learning. It is very important for learners to know how to learn it and how to use it (Hyland, 2002). It is obvious that for learners, writing is a means of recording and reformulating knowledge and developing ideas. It may also be a means of personal discovery, of creating, and of self-expression. According to Richards and Schmidt (2010), “writing is viewed as the result of complex processes of planning, drafting, reviewing and revising and some approaches to the teaching of first and second language writing teach students to use these processes ” (p. 641). Writing is the way to put words together to convey the meaning through those words. According to Luchini (2010), writing skill is a challenging task because it necessitates a wide range of cognitive, interpersonal, and linguistic strategies of which EFL learners are mostly unaware. Langan (2005) states that writing is a very complex skill including different stages and sub-processes including discovering and developing a thesis, organizing, revising, and editing what is written to have an effective, error-free piece of writing. Similarly, EFL/ESL writing is regarded as a difficult, complex and challenging process (Alsamadani, 2010). Wade (1995) persuasively states that writing is an essential ingredient in critical thinking instruction, since it promotes greater self-reflection and the taking of broader perspectives than does oral expression. Suitable written assignments, she believes, can stimulate classroom writers to enhance their active learning spontaneously. Writing, especially the process approach, is, by nature, a self-critical one. It lends itself to the kind of introspection that would prompt students to reflect on their understanding, and to communicate their feelings about what they know, what they are doing, what they are struggling with, and how they are experiencing their learning (White & Mc-Govern, 1994).

2. OTHER STUDIES DONE IN THE SAME FIELD

Tafazzoli, Rashidi Fakari, Ramazan zadeh and Sarli (2015) investigated the relationship between critical thinking dispositions and academic achievement in midwifery students of Mashhad University of Medical Sciences, Iran, in 2014. This correlation study was conducted on 60 midwifery students of Mashhad School of Nursing and Midwifery in 2014. All eligible students were recruited in this study. Data collection instruments included demographic and academic achievement form and the California Critical Thinking Disposition Inventory. Collected data were analyzed by descriptive statistics tests and Pearson correlation coefficient using SPSS software version 16. The mean and standard deviation (SD) of the total score of critical thinking dispositions were 260.10 ± 38.18 . The mean (SD) grade point average of students was 16.31 ± 1.05 . The results of Pearson correlation test showed no significant relationship between the total and subscales scores of critical thinking and academic achievement ($P > 0.05$). The results of this study indicated that there was no significant relationship between the critical thinking dispositions and its subscales with academic achievement.

Oğuz and Sariçam (2016) investigated the link between critical thinking dispositions and locus of control in pre-service teachers. The participants of this study were selected via easily accessible sampling technique. The participants consist of 347 pre-service teachers (203 female, 144 male) in Kütahya, Turkey. The Rotter Internal-External Locus of Control Scale and Critical Thinking Dispositions Scale aided in data collection. Once the data was transferred to an electronic environment and did not show a normal distribution in terms of gender and grade variables, so Mann Whitney-U test was used in order to comparing analysis and Spearman's correlation analysis was used for examining the level of relationship between variables. According to comparison analysis, the external locus of control and critical thinking dispositions differentiated with respect to gender and grade. In correlational analysis and regression analysis, there was a negative relationship between external locus of control and critical thinking dispositions. Results were discussed by the light of the related previous studies.

Stedman and Andenoro (2007) identified the Relationships between Emotional Intelligence Skill and Critical Thinking Disposition in Undergraduate Leadership Students. The link between thinking and emotions is essential in leadership education. With this in mind, the researchers sought to examine the relationship between the skill sets of emotional intelligence (Developing Your Emotional Intelligence) and the dispositions of critical thinking (EMI). The researchers identified positive relationships ranging in magnitude from low to substantial. The overall skills associated with emotional intelligence showed positive moderate relationships with cognitive maturity, engagement, and innovativeness. In considering EMI critical thinking disposition scores and emotional intelligence, the relationship was substantially positive. The conclusions and recommendations encourage educators to take advantage of this relationship by providing students with experiences which elicit their emotional intelligence. In so doing there is opportunity to strengthen their disposition toward critical thinking.

Ricketts and Rudd (2004) conducted a correlational study to explain the relationship between discipline specific critical thinking skills in agriculture and leadership and critical thinking dispositions of selected youth leaders in the National FFA Organization. Voluntary

participants in the study included 212 youth leaders from 50 states. The researchers developed critical thinking skills tests and critical thinking disposition inventory (*EMI*), which were distributed online and by conventional mailing procedures indicated positive, but low relationships between critical thinking skills and the innovativeness and engagement dispositions. Additionally, low, but negative relationships were found between critical thinking skills and the maturity critical thinking disposition. In the recommendations section, educators are asked to consider influencing critical thinking dispositions by exposing students to a wide range of cultures and experiences through field trips, service-learning activities, videotapes, and the Internet. It is also recommended that agricultural educators influence critical thinking by infusing teaching for critical thinking into agricultural education courses and in leadership training activities. Lastly, the researchers recommended further research on the instruments used to collect data on critical thinking skills and dispositions. Specifically, the cognitive maturity disposition of the *EMI* should be further developed, and the skills instrument should be altered to achieve more variability.

3. STATEMENT OF THE PROBLEM

Research concerning the relationship among critical thinking dispositions and different parts of second language learning especially reading comprehension is limited. To fill the gap, the present study is designed to investigate the relationship among thinking dispositions (i.e., comparing and connecting), reading comprehension and writing ability of Iranian EFL learners. Reading skill may be significant in Iran where English is taught as a foreign language. This important skill may have meaningful relationship with critical thinking dispositions. For that reason, the present study tried to reveal the relationship among thinking dispositions (i.e., comparing and connecting) and reading comprehension of EFL learners.

In spite of the importance of writing skill in the Iranian educational system, most EFL learners' writing abilities seem to be not good enough to achieve a good general proficiency in the language. Writing has long been a problem among the four language skills for EFL learners, even those who are at high language proficiency. Khabiri and Tonekaboni (2009) commented that "foreign language learners, especially those who want to continue their education in academic contexts, usually find writing a highly difficult and challenging task. Part of the difficulty lies in the fact that most students receive minimal or no instruction in learning how to write" (p. 54). Moreover, according to Myles (2002), "it is undoubtedly the act of composing, though, which can create problems for students, especially for those writing in a second language in academic contexts. Formulating new ideas can be difficult because it involves transforming or reworking information, which is much more complex than writing as telling" (p.1).

Based on the importance of critical thinking, reading comprehension and writing ability, some research such as Fahim and Sa'eepour (2011), Fahim and Hoominian (2014) Fahim and Barjesteh (2012), Nasir Ahmadi (2014), and Hosseini, Bakhshipour Khodaei, Sarfallah, and Dolatabadi (2012) have focused on investigating the relationship among critical thinking and other main skills. However, no research explored the relationship among comparing and connecting thinking dispositions, reading and writing ability of Iranian EFL learners. To fill the gap, the present study was designed to investigate the relationship among thinking

dispositions (i.e., comparing and connecting), reading comprehension and writing ability of Iranian EFL learners.

4. RESEARCH HYPOTHESES

H01: There is no significant correlation between EFL learners' comparing and connecting thinking dispositions and their reading comprehension ability.

H02: EFL learners' comparing and connecting thinking dispositions does not significantly predict their reading comprehension ability.

H03: There is no significant correlation between EFL learners' comparing and connecting thinking dispositions and their writing ability.

H04: EFL learners' thinking disposition does not significantly predict their writing ability.

5. METHODOLOGY

5.1. Participants

The total number of population of the present study was 150 Iranian EFL students who studied teaching English as a foreign language at Mojtaba Fanie Tehran language institute in Tehran, Iran. The sample consisted of female EFL learners and were randomly selected from different classes of the language institute. Most of the participants had already studied English for several years in private language institutes in Tehran. The EFL students varied in age from 14 to 23 years old (with a mean of 18.5). Therefore, the researchers tried to homogenize the learners as intermediate level. Among the sample, 100 EFL learners who got the band score of OQPT (i.e., from 30 to 45) were considered as the intermediate learners and participated in this study, that were consisted of 15 participants in piloted test.

5.2. Instruments

5.2.1. Quick Oxford Placement Test (QOPT)

The OQPT was given to participants to find out their homogeneity level. It is a placement test for homogenizing the whole population of the study as intermediate EFL learners. OQPT was used to measure the learners' general language ability so they could be described as homogeneously at intermediate level. It is the test of language proficiency presented by *Oxford University Press, Local Examination Syndicate* which provides tutors with a reliable and time-saving technique for determining the proficiency level of a learner. The OQPT measured reading and writing ability of the learners and consisted of 60 items, part one with the first 40 questions and part two with 20 items. The participants had 30 minutes to answer the questions and the collected data were analyzed through descriptive statistics. The researchers piloted the OQPT before the main administration. After pilot the test on 15 EFL learners similar in characteristics to the participants of this study, reliability of the test was estimated through KR-21 formula as ($r = 0.772$).

5.2.2. Comparing and Connecting Thinking Dispositions Questionnaire

As a sub-section of thinking dispositions questionnaire, comparing and connecting thinking dispositions questionnaire composes of 14 Likert-style items with points ranging from 0 to 6. This questionnaire was adapted from Noushtakins' M.A. thesis (2011). The first seven items of the questionnaire measure comparing and disposition, and items 8 to 14 measure connecting disposition. As Comparing and Connecting Thinking Dispositions constitute different but interrelated constructs- being able to make connections between different subjects depends on the ability to draw a good comparison. It should be noted that in order to avoid any miscomprehension; the Persian translated version of the questionnaire was administrated. The instrument was translated by the developer (i.e., Noushtakin, 2011). The EFL learners were asked to fill the questionnaire in accordance to the extent to which they agree with the questionnaire's statements. Those learners' responses that were strongly agree for an item received 6 points and those learners' responses that were strongly disagree received 0 point. The reliability of the critical thinking questionnaire was estimated to be ($r = 0.752$) with 15 subjects similar in characteristics to target subjects which demonstrated a reasonable degree of reliability.

5.2.3. Reading Test

In order to measure the reading ability of the learners, they were given a reading test. To do this, reading section of a *Preliminary English Test* (PET) was administrated. The paper has different parts. The learners are expected to read and understand different kinds of short texts and longer, factual texts. Text sources might include signs, brochures, newspapers, magazines and messages such as notes, emails, cards and postcards. Parts 1 to 5 focus on reading skills, including underlying knowledge of vocabulary and grammar. The exam includes tasks such as answering multiple choice questions, selecting descriptions which match different texts, and identifying true or false information. The researchers piloted the test before the main administration. After a pilot study on 15 learners similar in characteristics to the participants of this study, and reliability of study the test was calculated through KR- 21 formula as 0.758.

5.2.4. Writing Test

To assess the writing ability of the learners, writing section of a PET was administrated. Parts 6 to 8 focus on writing skills, including underlying knowledge of vocabulary and grammar. The exam includes tasks such as completing gapped sentences, writing a short informal letter of 35-45 words, and producing a longer piece of writing-either a long informal letter or a story of about 80-100 words that each parts had appropriate scales. The researchers piloted the test before the main administration. After pilot the test on 15 EFL learners similar in characteristics to the participants of this study, and reliability of the test was estimated through KR- 21 formula as ($r = 0.735$).

5.3. Procedure

In the present study, the researchers tried to investigate the relationship among the three variables. In practice, data collection was carried out from one single group. As the result, there

were no control group, pre-test, post-test, or treatment throughout the present study. In order to conduct the research study, the following steps were taken:

In order to homogenize the participants of the study, 150 EFL learners were given the OQPT. Out of the whole participants, 100 learners who got the band score of OQPT were considered as the intermediate learners since their scores were between 30 and 45. The second step in this study was to identify the level of comparing and connecting thinking dispositions. Accordingly, the comparing and connecting thinking dispositions questionnaire including 14 multiple choice items was administered to the participants. The third step was to measure the EFL learners' reading ability. In order to perform this, the reading section of the PET was administered. And finally, in order to measure the EFL learners' writing ability, the writing section of the PET was administered; these tests were conducted in one session.

5.4. Design

The present study was a quantitative descriptive and correlational research. In this study, the researchers investigated the relationship among comparing and connecting thinking dispositions, reading comprehension and writing ability of Iranian EFL learners. Reading and writing abilities were considered as dependent (predicted) variable and comparing and connecting dispositions was considered as the independent (predictor) variable.

6. RESULTS

6.1. Results of the OQPT Scores

Table 1: Results from the QOPT

The QOPT Scores	10-30 Lower-Intermediate	30-46 <i>Intermediate</i>	46-60 Upper-Intermediate
Number	29	100	21

6.2. Descriptive Statistics

Table 2: Descriptive Statistics of Thinking, Reading and Writing Scores

	N	Mean	Std. Deviation	Skewness	Std. Error	Ratios
	Statistic	Statistic	Statistic	Statistic		
Thinking	100	55.6600	9.09348	0.331	0.241	1.37
Reading	100	17.0900	1.83179	-0.508	0.241	-2.1
Writing	100	16.9600	1.62008	-0.312	0.241	-1.29
Valid N (listwise)	100					

As the above table shows, the distribution of the reading scores was skewed as the skewness ratio exceeded 1.96.

6.3. Testing the First Hypothesis

To test the first null hypothesis related to the correlation between thinking and reading scores, linearity condition was checked visually through the following scatter plot:

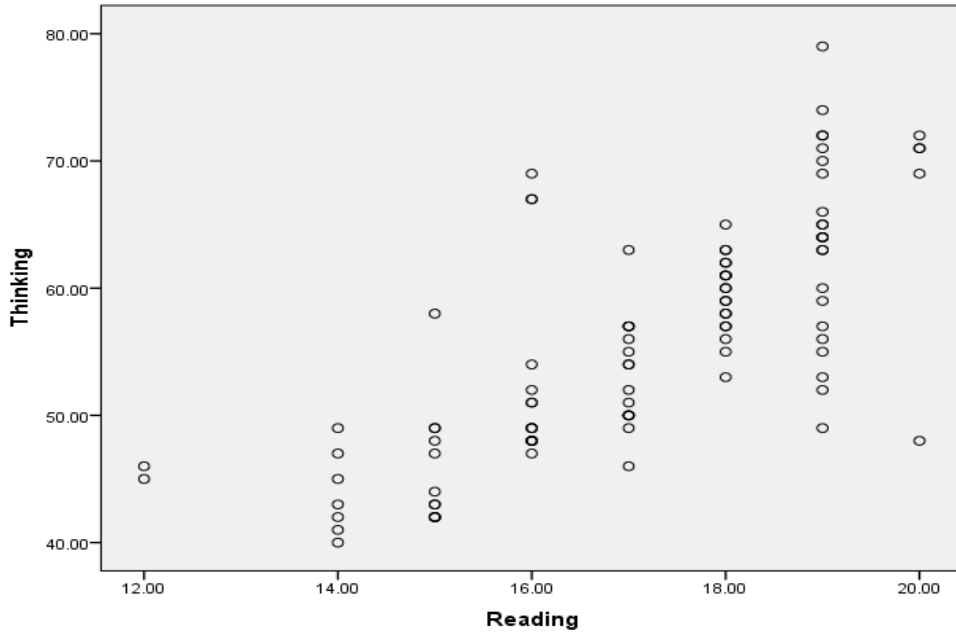


Figure 1: Scatter Plot of Thinking and Reading Correlation

As demonstrated in the above figure, the scores are scattered around a straight line stretching from bottom left to top right implying a linear and positive relationship. The distribution is almost similar at the two ends which ensures no major deviation from homoscedasticity condition. The following graphs visually check the possible existence of outliers:

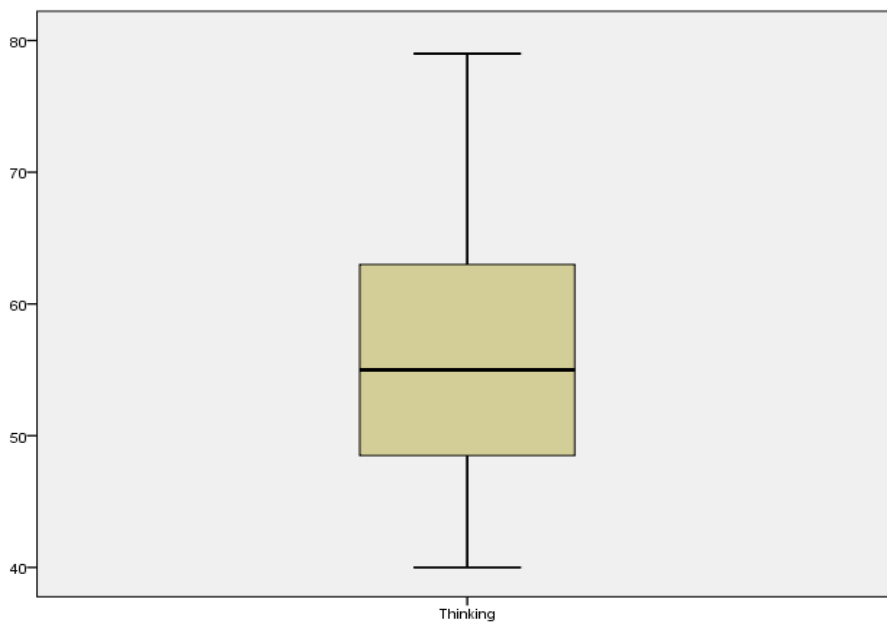


Figure 2: Boxplot of the Thinking Scores

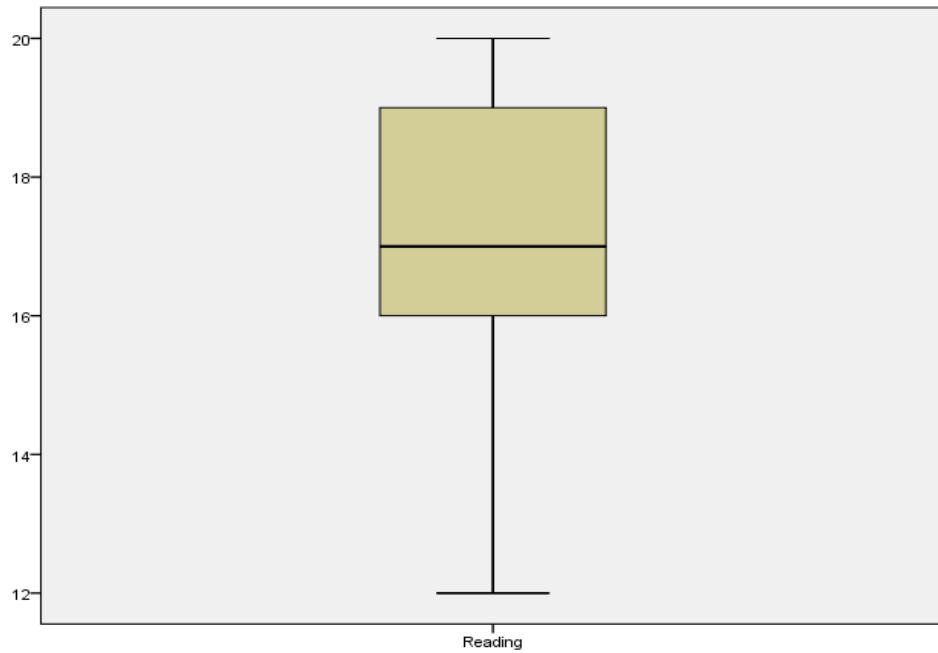


Figure 3: Boxplot of the Reading Scores

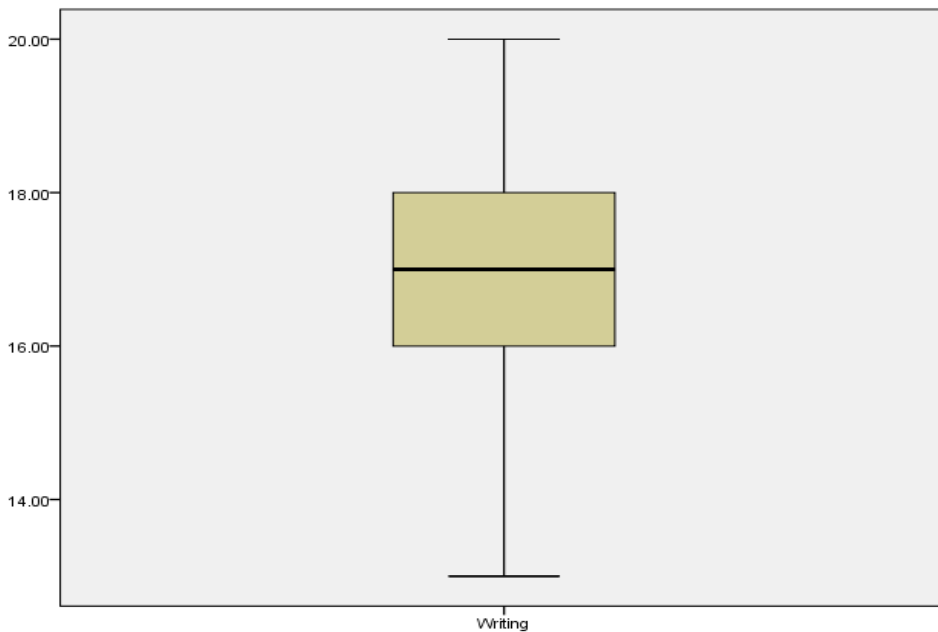


Figure 4: Boxplot of the Writing Scores

As it is shown in the above figures, there are no indicators of outliers outside the box, which ensures that there were no outlying score in the three sets of scores that affected normality of the distribution. To test the first hypothesis, the non-parametric Spearman formula was used as the reading scores were shown to be skewed. The following table shows the result thereof:

Table 3: Correlations between Thinking and Reading Scores

		Thinking	Reading
Spearman's rho	Thinking	Correlation Coefficient	1.000
		Sig. (2-tailed)	.
		N	100
	Reading	Correlation Coefficient	.771**
		Sig. (2-tailed)	.000
		N	100

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

As depicted in the above table, the correlation between thinking and reading scores turned out to be significant ($r=.77$, $p=.0005<.05$). Therefore, the null hypothesis is rejected. The strength of the correlation was 0.59 ($.771^2$), which according to Cohen's (1989) guideline is a large size.

6.4. Testing the Second Hypothesis

To test the second hypothesis, a linear regression was conducted with thinking as the independent variable (predictor) and reading as the dependent variable (predicted). The following output is the result:

Table 4: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744 ^a	.554	.549	1.23001

a. Predictors: (Constant), Thinking

b. Dependent Variable: Reading

As shown in the above table, the coefficient of determination was .554, which expressed as percentage means that 55 percent of the variation in the dependent variable was related to the independent variable. The following table displays the significance of the model:

Table 5: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	183.923	1	183.923	121.568	.000 ^b
	Residual	148.267	98	1.513		
	Total	332.190	99			

a. Dependent Variable: Reading

b. Predictors: (Constant), Thinking

As the above table depicts, the model was significant ($F=121.56$, $p=.000<.05$). This is further shown in the following table:

Table 6: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			
	B	Std. Error	Beta			Zero-order	Partial	Part	
1	(Constant)	8.747	.767		11.410	.000			
	Thinking	.150	.014	.744	11.026	.000	.744	.744	.744

a. Dependent Variable: Reading

The above table demonstrates that the predictability was statistically significant ($B=.744$, $p=.0005<.05$). Therefore, the second hypothesis is rejected. The following graph shows the homoscedasticity condition.

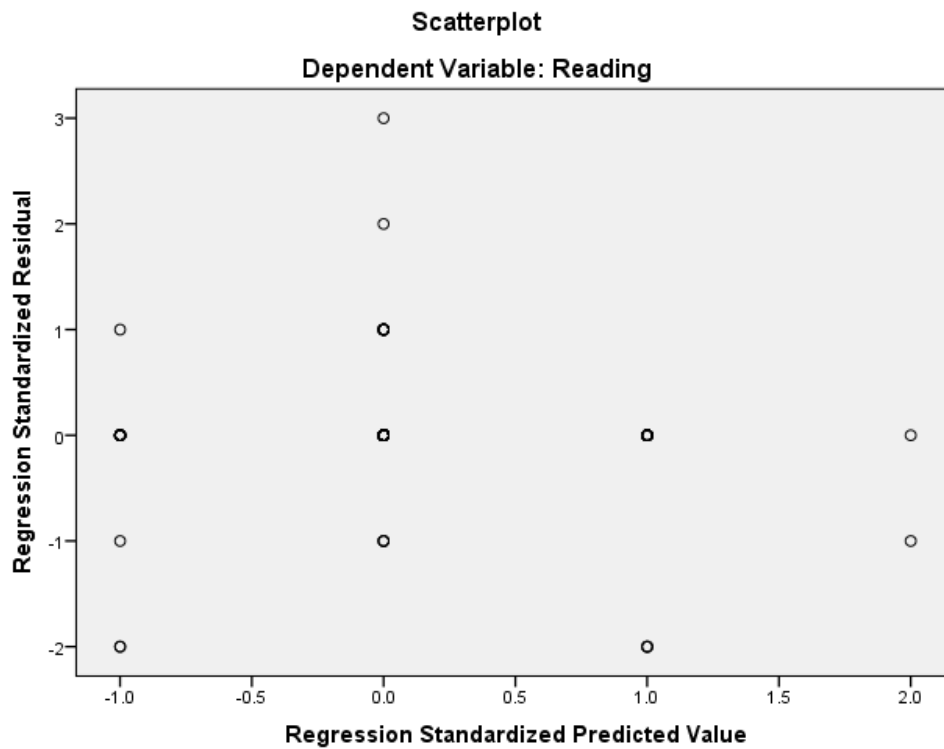


Figure 5: Distribution of Residuals for Reading Scores

As demonstrated in the above figure, the majority of the scores are clustered around the center; hence the homoscedasticity is not violated.

Table 7: Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	14.7427	20.5884	17.0900	1.36302	100
Std. Predicted Value	-1.722	2.567	.000	1.000	100
Standard Error of Predicted Value	.123	.340	.169	.043	100
Adjusted Predicted Value	14.7736	20.7201	17.0946	1.36586	100
Residual	-3.64207	4.05815	.00000	1.22378	100
Std. Residual	-2.961	3.299	.000	.995	100
Stud. Residual	-2.993	3.328	-.002	1.005	100
Deleted Residual	-3.72171	4.12904	-.00457	1.24924	100
Stud. Deleted Residual	-3.124	3.516	-.004	1.027	100
Mahal. Distance	.001	6.588	.990	1.116	100
Cook's Distance	.000	.107	.010	.023	100
Centered Leverage Value	.000	.067	.010	.011	100

a. Dependent Variable: Reading

The above table also shows that the maximum value of standardized residual is less than 3.3, but the minimum value is less than -3.3 which indicates existence of outliers. However, as Pallant (2007) states, with large samples it is common to find a number of outliers. If they are not too many, there is no reason to take any action. Inspection of the data revealed the existence of two outliers. The following graph shows the normal distribution of residuals about the predicted variable:

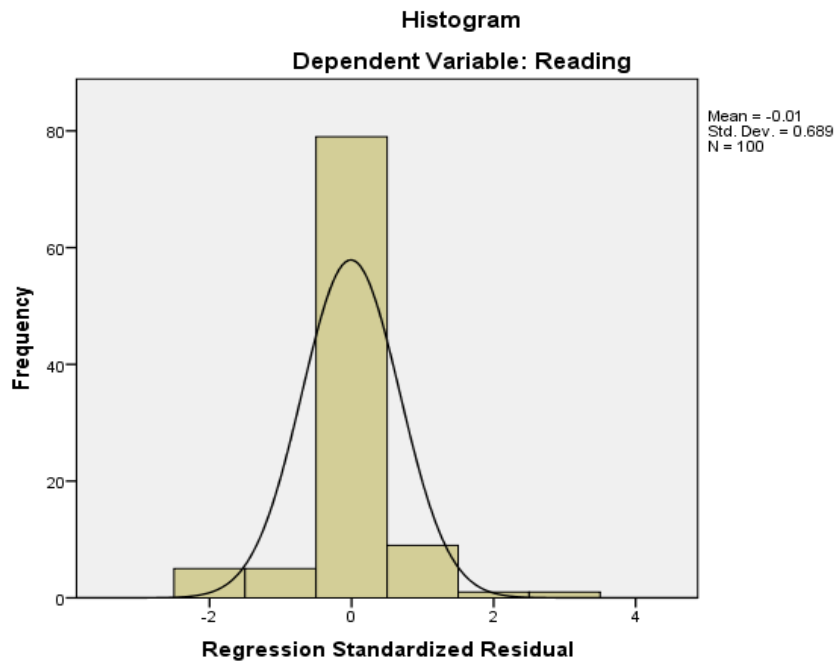


Figure 6: Distribution of the Residuals about Reading Scores

6.5. Testing the Third Hypothesis

To test the third hypothesis, the thinking and writing scores had to be correlated. Both sets of scores were already shown to be normally distributed. The linearity condition was checked visually through the following scatter plot:

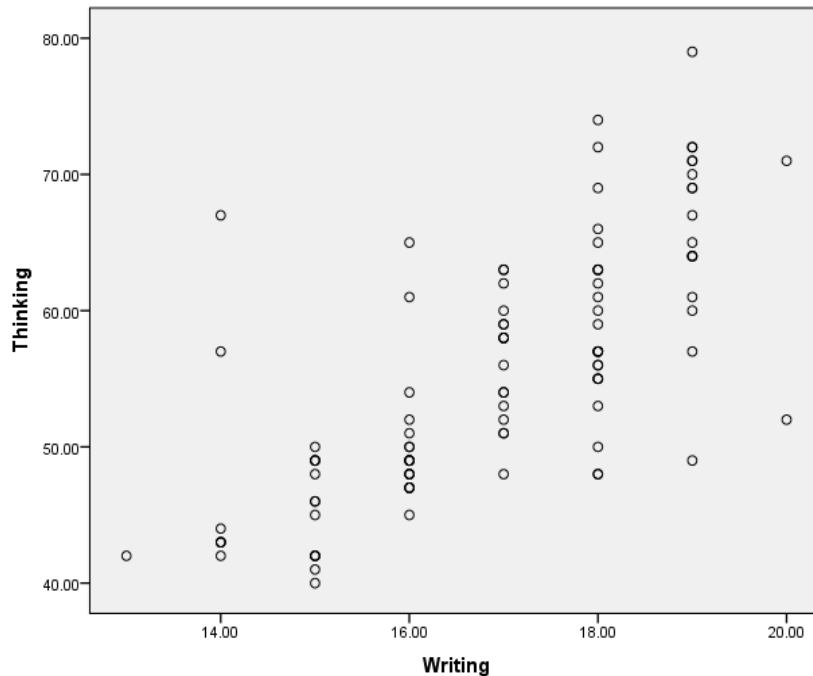


Figure 7: Distribution of Residuals for Writing Scores

As depicted in the above figure, dots form a straight line stretching from bottom left to the top right which suggests that there is a linear and positive relationship between the two variables. The outlier condition was already checked, and it was revealed that there was no outlying scores in either set of scores. There does not seem to be a violation of homoscedasticity condition as the distribution of the scores seem to be similar at the two ends and across the distribution. The following table shows the result of the Pearson calculation:

Table 9: Correlations

		Thinking	Writing
Thinking	Pearson Correlation	1	.719**
	Sig. (2-tailed)		.000
	N	100	100
Writing	Pearson Correlation	.719**	1
	Sig. (2-tailed)	.000	
	N	100	100

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

As the above table displays, the correlation between thinking and writing scores was significant ($r=.719$, $p=.0005<.05$) which leads to the rejection of the third null hypothesis. The strength of the correlation was 0.51 ($.719^2$), which according to Cohen's (1989) guideline is a large size implying that the two variables have 51 percent of shared variance.

6.6. Testing the Forth Hypothesis

To test the fourth null hypothesis, a linear regression was conducted to probe into how much the learners' thinking disposition could predict their writing ability. The following tables are the outcomes:

Table 10: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.719 ^a	.517	.512	1.13171

a. Predictors: (Constant), Thinking

b. Dependent Variable: Writing

As depicted in the above table, the R Square value turned out to be .51 which shows the shared variance between the two variables.

Table 11: Coefficients ^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	9.830	.705		13.937	.000			
	Thinking	.128	.013	.719	10.241	.000	.719	.719	.719

a. Dependent Variable: Writing

As depicted in the above table, the predictability came out to be significant ($B=.71$, $p=.0005<.05$). Therefore, the hypothesis is rejected implying that the thinking variable could significantly predict the writing variable. The outliers condition was checked through the following output:

Table 12: Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	14.9540	19.9497	16.9600	1.16483	100
Std. Predicted Value	-1.722	2.567	.000	1.000	100
Standard Error of Predicted Value	.113	.313	.155	.040	100
Adjusted Predicted Value	14.9521	20.0285	16.9637	1.16604	100
Residual	-4.41259	3.50883	.00000	1.12598	100
Std. Residual	-3.899	3.100	.000	.995	100
Stud. Residual	-3.950	3.119	-.002	1.005	100
Deleted Residual	-4.52903	3.55014	-.00374	1.14807	100
Stud. Deleted Residual	-4.286	3.269	-.004	1.030	100
Mahal. Distance	.001	6.588	.990	1.116	100
Cook's Distance	.000	.206	.010	.024	100
Centered Leverage Value	.000	.067	.010	.011	100

a. Dependent Variable: Writing

As displayed in the above table, the minimum standardized residual value is not less than -3.3 and the maximum does not exceed 3.3. Thus, the condition is met. The following graph visually shows the distribution of the residuals:

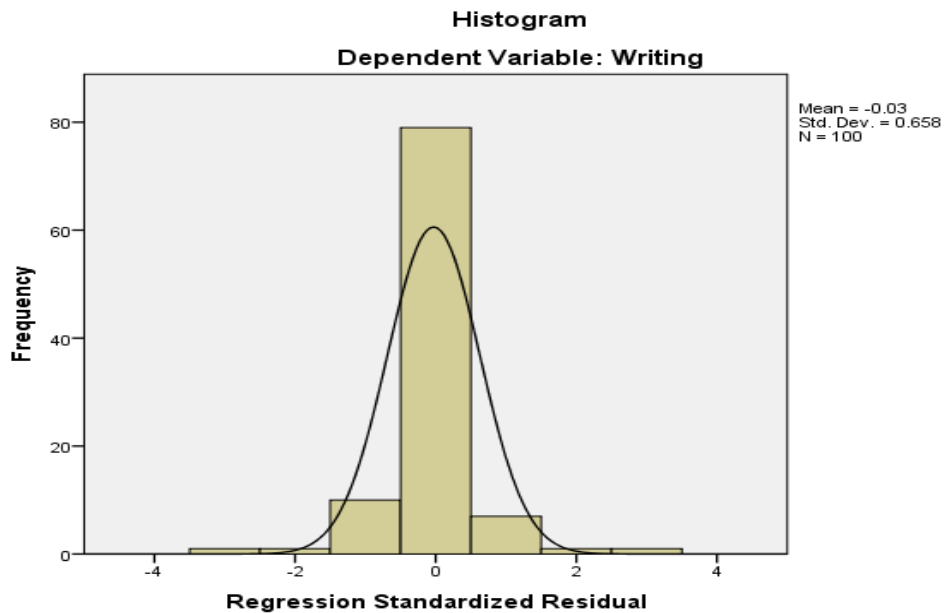


Figure 8: Distribution of Residual for Writing Scores

The following graph visually exhibits the distribution of the residuals.

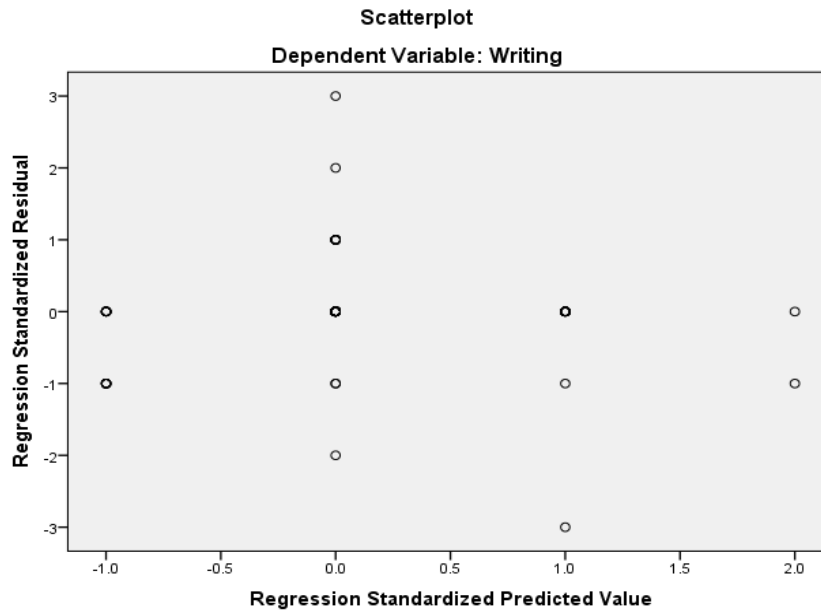


Figure 9: Distribution of Residuals about the Writing Scores

As exhibited in the above figure, almost the majority of the dots are scattered nearly around the center which guarantees homoscedasticity condition.

7. DISCUSSION

The purpose of the present study was to investigate and estimate the relationship among comparing and connecting thinking dispositions, reading comprehension and writing ability of Iranian EFL learners. The obtained results revealed that there was significant relationship between EFL learners' thinking disposition and their reading comprehension and writing ability. Moreover, EFL learners' thinking disposition did significantly predict their reading comprehension and writing ability. The findings of this research are in line with Noushtakin (2011). She investigated the relationship between artful thinking dispositions, language learning strategy use, ambiguity tolerance, and language proficiency scores of Iranian EFL learners. The researcher found that there were statistically significant correlations between five thinking dispositions, except for perceptive taking and memory strategy.

Similarly, the findings of the current study match with Rimiene (2002) who studied the difference of critical thinking skills and critical thinking dispositions when a critical thinking program involving brainstorming, problem-solving, reflexive writing, cooperative learning, discussions and debates were carried out on students. The California Critical Thinking Skills Test (CCTST) measuring critical thinking skills and the California Critical Thinking Dispositions Inventory (CCTDI) measuring critical thinking dispositions were administered to students prior to the course and again three months later. Findings showed that there was significant increase on all subscales of critical thinking skills and overall CCTST score as the result of the critical thinking program. However, no result on the correlation among critical thinking dispositions and skills was reported.

Comparing and Connecting thinking dispositions ways through which connections between different pieces of knowledge are reflected on. Implementation of this dispositions in class assists learners in finding and creating associations between different pieces information they encounter in learning process (Tishman & Palmer, 2006). Likewise comparing and connecting considers ways through which language learners find associations among different components of target language to make the later retrieval easier (Brown, 2000; Segalowitz & Lightbown, 1999). Accordingly, to cognitive approach to language learning, learning occurs when the new information is integrated to the bulk of existing knowledge in the mind (Hadley, 2003). Therefore being sensitive to similarities and learning how to look for connections can facilitate language learning and also reading comprehension and as well as writing ability.

8. CONCLUSION

The present study was an attempt to investigate and estimate the relationship among comparing and connecting thinking dispositions, reading comprehension and writing ability of Iranian EFL learners. The obtained results revealed that there was significant relationship between EFL learners' thinking disposition and their reading comprehension ability. That is to say, the first null hypothesis was *rejected*. Similarly, the second null hypothesis was *rejected*. It meant that EFL learners' thinking disposition did significantly predict their reading comprehension ability. With respect to the third null hypothesis, it was *rejected* with the conclusion that there was significant relationship between EFL learners' comparing and connecting thinking dispositions and their writing ability. Finally, the fourth null hypothesis was *rejected* too meaning that EFL learners' thinking disposition did significantly predict their writing ability. The findings of the present study are in line with Noushtakin (2011) who studied the relationship between artful thinking dispositions, language learning strategy use, ambiguity tolerance, and language proficiency scores of Iranian EFL learners. She found that there were statistically significant correlations between five thinking dispositions, except for perceptive taking and memory strategy.

9. PEDAGOGICAL IMPLICATIONS

The findings of the present study hold some implications:

- Language teachers should be more flexible toward teaching, and they should consider students' attitudes, interests, and abilities encouraging them to use their thinking and express themselves critically and creatively to enhance the learners' reading and writing abilities.
- Syllabus designers and material developers could use the findings of the present study in order to incorporate tasks and activities to encourage thinking generally, and connecting and comparing specifically in learners.
- Moreover, language teachers could use novel ways to foster their learners' thinking abilities.

10. LIMITATIONS

The present study faced some limitations. First of all, the study could not be conducted on both genders because of they were not available. So, all of the participants of the research were female learners. For that reason, the results of the study may not be generalized to male EFL learners. Secondly, the ages of all the participants of the present study varied from 14 to 23.

11. SUGGESTIONS FOR FURTHER RESEARCH

In this section, some practical suggestions in the light of the findings are presented as follows:

- The researcher selected female EFL learners because it was more available to make connection with them. Further research is suggested to use larger samples of both Female and male participants to be able to generalize the findings to all EFL learners, and compare them.
- In the present study, other skills of the language such as speaking and listening were not investigated. Future research studies may investigate the relationship among comparing and connecting thinking dispositions, speaking and listening ability of Iranian EFL learners.
- The researcher selected intermediate EFL learners because the learners with lower language proficiency were not very suitable for participating in this research and participant with higher level of proficiency were not available. Hence, future research could focus on learners with different levels (e.g., elementary, upper-elementary, upper-intermediate, advanced and upper-advanced).
- Interested researchers are suggested to investigate the relationship among other thinking depositions types, questioning and investigating, reasoning, observing and describing perspective taking, and complexity with reading comprehension and writing ability of Iranian EFL learners.

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