

Examination of the Relationship between Critical Thinking Disposition and English Learning Achievement as Mediated by Emotional Intelligence

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Received: 2014/5/20

Accepted: 2015/4/1

Abstract

This study is intended to examine the relationship between critical thinking disposition and English learning achievement among Iranian high school third-grade EFL learners mediated by emotional intelligence. A sample of 264 students (145 males and 119 females) was assessed for their level of critical thinking disposition and emotional intelligence. Participant's scores on their final English test were also used as the measurement of their English learning achievement. The results revealed a positive correlation between total critical thinking dispositions ($r=.506$, $p<.01$) and its subscales i.e., engagement($r=.33$), maturity($r=.47$), and innovativeness ($r=.44.6$) with English learning achievement. The results also suggested that emotional intelligence acts as a mediator of the relationship between critical thinking disposition and English learning achievement.

Keywords: Critical thinking disposition, Emotional intelligence, English learning achievement, Iranian English learners

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1. Introduction

In recent years, students' backgrounds and individual differences have increasingly recognized and respected in language education (Richards & Rodgers, 2001). Critical thinking (CT) and emotional intelligence (EI) are among the most noteworthy constructs which have recently caught remarkable attention in the domain of education. Their theoretical and empirical bases in the literature of this study demonstrate the association of each of these constructs with academic success and language learners' achievement in the English as a Foreign Language (EFL) context. For instance, some researches have indicated that critical thinking is associated with success in many areas of foreign language learning including its skills and sub skills (e.g. Fahim & Azarniouchi, 2011; Ghorbandordinejad & Heydari, 2012; Zarei & Haghgoo, 2012; Fahim & Koleini, 2014; Karamloo, 2014). Also, Renner (1996) put forward that higher-order thinking skills positively influence learning skills through which facilitate achievement of higher levels of language proficiency. Furthermore, dispositions or desires are prerequisite conditions for development and application of these thinking skills (Profetto, 2003, Jin, Bierma & Broadbear, 2004). Facione (2000) defined dispositions as "consistent internal motivations to act toward or respond to persons, events, or circumstances in habitual, yet potentially malleable ways" (p. 64). Based on the related literature, the relationship between dispositions and skills is significant (Facione, 1990; McPeck, 1990; Brookfield, 1995; Facione, Facione, & Giancarlo, 1996; Facione & Facione, 1997). Accordingly, one of the foreign language instructors' main goals is to enhance EFL learners' critical thinking through creating an effective context and background for

disposition toward it. Likewise, emotional intelligence has also received research interest in attaining academic objectives in the EFL context. As Goleman (2001) contended emotional intelligence serves both internal mechanisms and external environment in the process of language learning. Recently, this emotional skill has also been examined in the framework of critical thinking (e.g., Ghanizadeh & Moafian, 2011; Ebrahimi & Moafian, 2012). According to Little (1997), fostering students' tendency toward thinking critically needs a friendly, supportive and non-threatening classroom atmosphere.

In spite of well-established significance of critical thinking and emotional intelligence in terms of effective learning, serious deficiencies can be seen in Iranians' national system of foreign language teaching in which teachers are required to do their best to teach "what to think" rather than "how to think effectively (Fahim & Sa'ee pour, 2011). Hence, it is necessary to pursue the investigation on the value of these variables in the Iranian EFL context to shed some lights on their effectiveness in teaching and learning processes. Although most researches in this regard have explored the role of critical thinking and emotional intelligence in the EFL context, there seems to be little study on the mediating role of emotional intelligence between students' critical thinking disposition and their achievement.

The purpose of this study is to examine the relationship between students' critical thinking disposition and their English learning achievement and determine the mediating role of emotional intelligence. To do so, the following research questions were posed:

1. Is there any relationship between EFL learners' critical thinking disposition and their English learning achievement?
2. Does EFL learners' emotional intelligence mediate the relationship between their critical thinking disposition and English learning achievement?

2. Literature Review

2.1 Critical Thinking and Foreign Language Learning

There is a diverse body of educational research reporting the role of critical thinking skills in foreign language learning. In such a study, Fahim and Azarniouchi (2011) showed a positive correlation between the critical thinking ability of the learners and their grammar test scores. Also, Ghorbandordinejad and Heydari (2012) reported close relationship between the learners' critical thinking ability and their reading comprehension score and their reading micro-skills. In another major study, Zarei and Haghgoo (2012) examined the relationship between critical thinking with L2 grammatical knowledge and lexical knowledge. Their findings revealed that neither the correlation between vocabulary and critical thinking nor correlation between grammar and critical thinking was statistically significant, but there was a strong trend towards a positive relationship. In addition, Assadi and Jafari (2013) reported that critical thinking instruction had a positive effect on writing performance. In a more recent study, Karamloo (2014) disclosed that there is a significant relationship between critical thinking ability and total learning style. Fahim and Koleini (2014) also conducted a study to investigate the relationship between critical thinking ability and the speaking skills of Iranian students. The

results of the study showed a strong relationship between the ability to think critically and speak skillfully. In another recent study, Nosratinia, Asiabar and Sarabchian (2014) explored the relationship between EFL learners' language learning strategy use, and critical thinking. Their findings suggested that significant relationships exist between EFL learners' use of language learning strategies and critical thinking.

2.2 Emotional Intelligence and English Achievement

Emotional intelligence has recently attracted a lot of interest in the academic literature (Mayer, Salovey, & Caruso, 2000; Charbonneau & Nicol, 2002; Petrides & Furnham, 2003; Saklofske, Austin, & Minski, 2003). More recently, there has been more interest regarding the role of EI in attaining academic objectives in second language acquisition. In a study conducted by Hasanzadeh and Shahmohamadi (2011), the results indicated no relationship between total emotional intelligence and language achievement, but some of the main components of emotional intelligence, i.e. self-assertion, independence, and optimism have statistically meaningful relationship with language achievement. Motallebzadeh and Azizi (2012) stated that there was a positive relationship between emotional intelligent abilities and its subcategories with TOEFL/PBT. Karaman (2012) investigate the emotional intelligence and the performance on English language test of Turkish undergraduate students. He found no statistically significant relationship between the emotional intelligence and the performance on English language test of the Turkish undergraduate students. Alavinia and Behyar (2012) in an attempt

to find the potential relationship between Iranian EFL learners' emotional intelligence and their writing performance in terms of lexico-semantic errors, reported significant amount of correlation between the learners' emotional intelligence and their lexico-semantic errors. The findings of Zarafshan and Ardeshtari's (2012) study also revealed that there was a positive relationship between English proficiency and use of language learning strategies but a negative relationship between emotional intelligence and English proficiency. In a study on 168 intermediate learners, Jahandar, Khodabandehlou, Seyedi and Dolat Abadi (2012) found that EI components have significant impact on listening in males and females. In a more recent investigation, Rokni, Hamidi and Gorgani (2014) reported a significant relationship between the students' emotional intelligence and their language achievement.

2.3 Emotional Intelligence in Critical Thinking Framework

According to Elder (1997), critical thinking is the only plausible vehicle by which we could bring intelligence to bear upon our emotional life. From this point of view, an effective learning would be the result of the reciprocal association between cognitive and affective dimensions. Meyers, Brookfield and Paul, as the first scholars, argued that thoughts and emotions are inextricably bound (as cited in Moon, 2008). An emerging body of theoretical and empirical studies has suggested the mutual association of these two constructs. More recently, situating CT within EI framework, Moon (2004) proposed a grounded model intended to explore the forms of relationship that might exist between EI and CT (as cited in

Moon, 2008). The framework demonstrates that emotion can have an influence on the process of CT and alternatively it may arise from the process of CT although not in a simple and straightforward manner. Examining EI and CT in the context of leadership education, Stedman and Andenoro (2007) found a positive relationship between EI and CT disposition in undergraduate leadership students. In one of the first attempts to investigate the mutual relationship between EI and CT in EFL context in Iran, Ghanizade and Moafian (2010) found a positive and significant relationship between EFL learners' emotional intelligence and their critical thinking. More recently, in second study, situating critical thinking within the framework of emotional intelligence, they indicated that emotional intelligence plays a facilitative role in enhancing EFL learners' critical thinking ability (Ghanizade & Moafian, 2011). Ebrahimi and Moafian (2012) in a similar study found that simultaneous presence of these two variables may lead to positive reciprocal influence on one another which culminates in gaining higher levels of professional success.

3. Materials and Method

3.1 Participants

The participants of this study were 264 Iranian high-school students of grade 11 from Meshkinshahr, a suburban area of Ardebil, in the academic year 2013-14. The sample was selected based on the multistage random sampling. Based on Krejcie and Morgan's (1970) formula with confidence level of 95% (margin of error = 5%) the size of the sample was determined to be 260. Of the sample 145 (55%) were male and 119 (45%) were female students. All the participants were in intermediate

level. They spoke Azari as their mother tongue and learn English as a foreign language.

3.2 Instruments

Two questionnaires were administered to participants as the major sources of data. The participants' scores on their English language final exam were used as the indicator of their English achievement. Modified Schutte EI Scale (Austin, Saklofske, Huang, & Kenney, 2004) was used to assess levels of students' emotional intelligence. For the purpose of this study, Persian version of this 41-item questionnaire was adopted. Bakhshipour, Zarean, and Assadollahpour (2009) have translated this scale into Persian and have reported satisfactory construct validity for it. In the present study, the Cronbach's alpha for the whole test was calculated and turned out to be 0.86.

Rickett's Critical Thinking Disposition Scale (Ricketts, 2003) containing 33 multiple-choice items, each of which is answered on a 5-point likert scale, ranging from 1 (strongly disagrees) and 5 (strongly agree), was utilized to measure the students level of critical thinking disposition. It consists of three subscales including engagement, maturity, and innovativeness. In this study, Persian version of this scale that has been translated and validated by Pakmehr, Mirdoraghi, Ghanaei Chamanabad and Karami (2013) was used. In the present study, the total reliability of scale was calculated via Cronbach alpha which was found to be 0.80. Coefficient alphas for the subscales of critical thinking disposition i.e., engagement, maturity and innovativeness reported as .63, .74, .60 respectively.

3.3 Procedure

In order to accomplish the purpose of this study, the following steps were taken: First, a review of literature in the field of the research topic was carried during which related materials (e.g. journals, books, websites and theses) were scrutinized to collect relevant information with regard to research variables. Next step was administering survey questionnaires prior to which a permission for data collection is taken from director of educational office of Meshkinshahr. Then, the questionnaires were distributed among students of selected high schools. Out of 285 distributed questionnaires, 264 were fully completed and returned. The rate of the returned questionnaires was %92 which could provide satisfactory data for the study. In the third step, a written request was handed and the participants' scores on the final English test were obtained through a printed report prepared by Meshkinshahr's Office of Education, Academic Assessment and Evaluation Department. Then, the gathered data from these processes were inserted into SPSS 21 (Statistical Package for Social Science) to be analyzed.

4. Results

4.1 Relationship between Critical Thinking Disposition and English Achievement

As the first step, Pearson product-moment correlation coefficient was calculated to explore the relationship between critical thinking disposition and English learning achievement. Furthermore, preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The results presented in Table 1, indicated that English learning achievement is significantly correlated with total critical thinking

disposition ($r = .506$, $p < .01$) and the correlation coefficient among variables suggests that English learning achievement is significantly and positively related to maturity ($r = .329$, $p < .01$); innovativeness ($r = .469$, $p < .01$) and engagement ($r = .446$, $p < .01$).

Table1 Correlation matrix of critical thinking disposition and English achievement

Correlations (N=264)					
	English Achievement	Engagement	Maturity	Innovativeness	Tot. CT disposition
English Achievement	1				
Engagement	.446**	1			
Maturity	.329**	.432**	1		
Innovativeness	.469**	.688**	.431**	1	
Tot. CT disposition	.506**	.883**	.721**	.862**	1
**, Correlation is significant at the 0.01 level (2-tailed).					

4.2 The Mediating Effect of Emotional Intelligence

Going along with research question 2, hierarchical multiple regression analysis was conducted in order to examine the ability of critical thinking disposition to predict English learning achievement, after controlling for emotional intelligence. Preliminary analyses were used to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. As it is illustrated in table 2, critical thinking disposition is entered at Step1, explaining of 25.6% of the total variance in language achievement. After entry of Emotional intelligence at Step 2 the total variance explained by the model as a whole was 33.4%, $F(2,261)$

$= 65.52$, $p < .01$. The emotional intelligence explained an additional 12.2% of the variance in English achievement after controlling for critical thinking disposition. R squared change $= .08$, F change $(1,261) = 30.7$, $p < .01$. In the final scale, both emotional intelligence and critical thinking disposition measures were statistically significant, with the former Scale recording a lower beta value ($\beta = .30$, $p < .01$) than the CT Scale ($\beta = .41$, $p < .01$). The obtained results suggest that emotional intelligence significantly mediates the relationship between critical thinking disposition and English learning achievement. Put it another way, EI appeared to play a determinant role in the predictive power of CT disposition in terms of English achievement.

Table 2 Model summary and coefficient

Predictor variables	Model Summary			Coefficients		
	B	t	Sig	B	t	Sig
constant	5.266	4.55	P<.01	.506	4.55	.000
CT Disposition	.093	9.49	.000	.411	7.716	.000
Emotional Intelligence				.295	5.543	.000
R	.08			.256		
Adjusted R Square	.253			.122		
F change	30.72			65.52		
Sig	p>.05			P<.01		

5. Discussion

The present study set out with the primary aim of investigating the relationship between students' critical thinking disposition and their English learning achievement. Furthermore, it was about to explore the mediating role of emotional intelligence may play in the relationship between these two variables. With respect to the relationship between critical thinking disposition and English learning achievement, the study findings indicate significant positive correlation between total CT disposition and English achievement. The findings seems to somewhat consistent with the results of many other studies in which a vital and advantageous role has been attributed to critical thinking in different domains of foreign language learning. (e.g. Fahim & Azarniouchi, 2011; Ghorbandordinejad & Heydari, 2012; Zarei & Haghgoo, 2012; Assadi & Jafari ,2013). Most of these studies are intended to attach notably high significance to CT construct in terms of language achievement. Based on these studies, it can be inferred that the important advantage of critical thinking is that it encourages active learning by teaching students how to think rather than what to think. For instance, the findings of this study seem to be consistent with that of Fahim and Azarniouchi's (2011) study

in which they reported a positive correlation between critical thinking ability of the learners and their grammar test scores in the inductive period. These findings are also in agreement with Assadi and Jafari's (2013) investigation which revealed a positive effect of critical thinking on writing performance of the participants. Furthermore, the results are consistent with those of Fahim and Kolehini (2014) who found a strong relationship between the ability to think critically and speak skillfully. Additionally, in accordance with acquired results in this research, Nosratinia, Asiabar and Sarabchian (2014) indicated that significant relationships exist between EFL learners' use of language learning strategies and critical thinking. By the same token, the reported findings seem to accord theoretically with this widespread belief that higher-order thinking skills positively influence higher-order learning skills through which facilitate achievement of higher levels of language proficiency (Renner, 1996). There should be several possible explanations for these results. One explanation might be that learners who demonstrate stronger critical thinking disposition may be more efficient in getting desired achievements in language learning. Further, the result may be explained by the fact that, the learners'

who have sufficient inclination, tendencies and ability to use their cognitive powers to make purposeful judgments about what to believe or what to do may demonstrate higher degree of critical thinking ability and get better achievement in most areas of foreign language learning.

Another major finding of the present study was that emotional intelligence appeared to be considered as a mediating factor in the relationship between student's critical thinking disposition and their English achievement. The lack of direct evidence in the literature in this regard, made it difficult to interpret the results of the study. Although, it can be hypothesized that the results of studies examined the mutual relationship between EI and CT in EFL and other contexts (e.g., Elder, 1997; Stedman & Anderono, 2007; Ghanizade & Moafian, 2010) on one hand and studies that examine the role of emotional intelligence in foreign language learning (Zarafshan and Ardeshiri, 2012; Jahandar et al., 2012) on the other. It may be regarded as the contributing and facilitating factors for interpretation and justification of obtained results in this section. In short, the well-documented relationship between CT and EI with language learning as well as well-established association of EI with CT can be regarded as a plausible theoretical framework to mediating role that EI may play. For example, the findings of two separate studies conducted by Ghanizade and Moafian (2010, 2011) are somewhat consistent with the results of this investigation. They found a positive and significant relationship between EFL learners' emotional intelligence and their critical thinking and indicated that emotional intelligence plays a facilitative

role in enhancing EFL learners' critical thinking ability. Similarly, the study of Ebrahimi and Moafian (2012) can be considered to corroborate these findings. They reported that the simultaneous presence of critical thinking and emotional intelligence leads to positive reciprocal influence on one another which culminates in gaining higher levels of professional success. Supporting the results of the present investigation, Stedman and Andenoro (2007) also found a substantially positive relationship between EI and CT disposition in undergraduate leadership students. The findings in this section can be explained through this fact that, integrating critical thinking in language learning programs needs a friendly, supportive and non-threatening classroom atmosphere and an effective context for disposition and desire toward it. One of the necessities for establishing such an efficient learning environment is resorting to learners' affective factors like emotional intelligence. Put it another way, emotionally intelligent students through creating an active, flexible, relaxed and supportive classroom atmosphere can pave the way to increased motivation and desire to engage in higher level of cognitive abilities.

6. Conclusion

This study was about to analyze research literature and explore insights into relationship between critical thinking disposition and language learning achievement with consideration of the mediating role that emotional intelligence may play in this regard. This was a first attempt at outlining a conceptualization of critical thinking disposition that foregrounds the role of emotional intelligence in EFL context. The findings

of the present study suggested that both critical thinking disposition and emotional intelligence are significantly related to English achievement and EI as a determinant factor mediates the predictive role of CT disposition in terms of English achievement. In general, therefore it seems that in the process of second or foreign language learning, learner's individual differences i.e. affective and cognitive factors should be respected and gained considerable attention to yield desired outcomes in this domain. Taking together, these results revealed that all language learners must be adequately disposed and willing to engage in critical thinking that in turn lead to achieving higher level of language proficiency. Moreover, students' emotional intelligence as an effective factor in terms of setting the stage for critical thinking should be attached high significance in EFL Context. Eventually, due to the well-established role of psychological factors in learning process, moving the debates forward in this regard appears to be highly recommended.

7. Pedagogical implications and future research

Using the obtained results of the present study and evidence of the various studies mentioned earlier, some implications may be drawn. It is crucial for EFL/ESL teachers to encourage students to use their thinking abilities and provide them with challenging opportunities to reflect, grow, and learn. Furthermore, due to the EFL learners' urgent need to course books and materials that engaged them in critical thinking, some pedagogical suggestions would be directed for syllabus designers and material developers. They should not only make an effort to create lessons that promote critical thinking, but also encourage students to reflect on their

progress. Teachers' effective use of questions, involving students in discussions over challenging and motivating topics and various forms of reflection conducted on the basis of mutual respect could engage students in meaningful critical thinking processes. Hence, materials developers should incorporate activities and practices which stimulate and build features of critical competence, preparing both learners and teachers to function well in the society as competent, autonomous, and accountable citizens. The next suggestion would implicate the Iranian education department. In addition, it is hoped that the results of this study might help curriculum designers to plan English language courses by considering EI skills. This study might also help to raise teachers' and pre-service teachers' awareness of EI skills of students and implement their practice accordingly, in terms of choice of materials, and/or teaching methods, creating the necessary atmosphere in the class and preparing useful classroom activities.

Some suggestions are offered for future research: First, the present study collected quantitative data from the limited sample of 264 high school third-grade students in Meshkinshahr. Therefore, it can be suggested that future researches should consider participants from other regions in order to replicate this study. Second, this research reports examined interrelationships between two major theoretical frameworks: critical thinking disposition and emotional intelligence. The tendency in educational research to unify different theoretical orientations within one conceptual model to explain student success has been recently gained research interest. Therefore, it is highly recommended that this line of inquiry has been pursued with respect to examining the

interconnectedness of other effective and cognitive factors in terms of academic achievement. Furthermore, future research studies can combine quantitative with qualitative research procedures in order to determine if the responses of the participants are consistent or not, and to obtain more accurate evidence on the relationship between CT disposition, EI and English learning achievement.

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بررسی رابطه بین گرایش به تفکر انتقادی و پیشرفت تحصیلی دانش آموزان در درس زبان انگلیسی با میانجیگری هوش هیجانی

فرهاد قربان دوردی نژاد^۳ و فرهاد نوری زاده^۴

تاریخ دریافت: ۹۳/۵/۲۹

تاریخ پذیرش: ۹۴/۳/۱۱

هدف این پژوهش بررسی رابطه میان گرایش به تفکر انتقادی و موفقیت دانش آموزان پایه سوم متوسطه در درس زبان انگلیسی با میانجیگری عامل هوش هیجانی بوده است. بدین منظور تعداد ۲۶۴ نفر دانش آموز (۱۴۵ پسر و ۱۱۹ دختر) پایه سوم متوسطه انتخاب شد و میزان گرایش به تفکر انتقادی و هوش هیجانی آنان مورد سنجش قرار گرفت. از نمره امتحان زبان انگلیسی پایان سال دانش آموزان به عنوان مشخصه پیشرفت زبان انگلیسی آنان استفاده گردید. نتایج پژوهش، رابطه معناداری را بین گرایش به تفکر انتقادی ($r=506$) و مؤلفه های آن یعنی تعهد ($r=33$)، بالندگی ($r=47$)، شادکامی ($r=44.6$) با میزان پیشرفت تحصیلی دانش آموزان نشان داد. همچنین یافته های تحقیق حاکی از آن بود که هوش هیجانی می تواند به عنوان یک عامل میانجی در رابطه بین گرایش به تفکر انتقادی و موفقیت تحصیلی دانش آموزان در درس زبان انگلیسی عمل کند.

واژگان کلیدی: گرایش به تفکر انتقادی، هوش هیجانی، پیشرفت تحصیلی دانش آموزان، درس زبان انگلیسی

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