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## Research Paper

### Relationship between Teaching Experience, Academic Qualifications and In-service Training Courses: The case of Iranian EFL teachers' use of critical thinking-based teaching strategies

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#### Abstract

This study intended to investigate critical thinking-based teaching strategies EFL teachers of Iranian high schools integrate into their teaching. To this purpose, the inter-relationship between the teachers' frequency of use of critical thinking-based teaching strategies and their teaching experience, their attendance at critical thinking in-service training courses, and their higher university degree were explored through a survey questionnaire. To analyze the collected data, means, frequencies, standard deviations, percentages, exploratory factor analysis (EFA), correlation coefficient, and five-point Likert scale were utilized. The obtained results showed that teaching experience was negatively correlated with the frequency of strategy use, and that no significant relationship was found between the frequency of strategy use and teachers' higher university degree. The results further showed a significant relationship between the frequency of strategy use and critical thinking in-service training courses attended by teachers. The findings of this study imply that critical thinking should be reinforced in Iranian education system as well as in high school teaching schedule.

**Keywords:** *Critical thinking-based teaching strategies, EFL teachers of Iranian high schools, In-service training courses*



## **Introduction**

According to Paul and Elder (2008), critical thinking is a style of thinking which permits individuals to examine and analyze various viewpoints of an issue and then incorporate it into a procedure of making decisions. This is supported by Halpern (1999) who states that in a pedagogical setting, educators must be regarded as agents of critical thinking who direct the students to think much more critically through different teaching strategies because critical thinking brings about problem solving, decision-making, and creativity. Rudd (2007) too believes that high school teachers can be considered as a part of the main supporters of the development of critical thinking, and thus, they should provide some chances to the students to structure their skills and knowledge to look into new sections and to learn some new things with certainty. He adds that they should be ready to change the method and techniques of their teaching if some other ones are understood to be much more applicable, and that is why the teachers are not accounted just as providers of information, but they are also considered as promoters of critical thinking. In this way, students along with teachers may raise their abilities to think and become problem solvers, independent thinkers, and better learners.

As for language teaching strategies use, it should be noted that they might be in relation to some personal variables, including age, proficiency level, and gender. It is also possible to look for some connections between them and critical thinking. According to Rabi'ee (2010), considering Iranian EFL classes, class activities like reviewing facts, characterizing basic ideas, rewriting the sentences, expressing the main existing concepts, and summarizing the texts are popular in most of the English classes in Iran's schools. These types of activities, in accordance with Bloom's (1956) taxonomy of educational objectives are viewed as lower-order thinking skills. In this manner, according to Tabatabaei and Parsafar (2012), Iranian EFL learners acknowledge beliefs without considering them in the form of truthful pieces of evidence. It, however, appears that the number of studies which have dealt with the function of critical thinking-oriented teaching in English classes as an imperative variable is scarce, although it is a serious source of controversy which second language teachers confront in their EFL classes.

With reference to the reality that language teaching strategies encourage learning and results in a more successful and preferable performance when the students are learning another language, the current research intended to empirically examine the relationship between the teachers' frequency of use of critical thinking-based teaching strategies and their teaching experience, their attendance at critical thinking in-service training courses, and their higher. Hence, the following research questions were addressed:

- Q1. Is there any significant relationship between Iranian high school EFL teachers' frequency of use of critical thinking-based teaching strategies and their teaching experience?
- Q2. Is there any significant relationship between Iranian high school EFL teachers' frequency of use of critical thinking-based teaching strategies and their higher university degrees?
- Q3. Is there any significant relationship between Iranian high school EFL teachers' frequency of use of critical thinking-based teaching strategies and in-service critical thinking courses attendance?

## **Literature Review**

Many studies have so far been conducted in connection with the role of critical thinking in developing language skills, from which only a few are mentioned here. Khabiri and Firooz (2012) tried to explore the comparative effect of utilizing critical thinking (CT) skills and

Cooperative Learning (CL) on EFL learners' writing skills in a process-based approach to writing. The final data confirmed the rejection of the null hypothesis with the inference that CT instruction was significantly more effective than CL in enhancing EFL learners' argumentative paragraph writing. Danaye Tous and Haghighi (2016) elaborated on the difference between the performance of female and male learners of EFL in Iran regarding different aspects of the CCTST. No significant distinction between females and males on the subscales quantified; i.e., deductive reasoning, inductive reasoning, analysis, evaluation, and the inference was shown as a result. Nikoopour et al. (2011) probed into the relationship among students' learning strategies and their ability of thinking critically. They gave a survey questionnaire of Critical Thinking (CT) and the SILL (Strategy Inventory for Language Learning) to one hundred students of the university who were studying English translation. The study showed a significant relation between some indirect and direct LLSs (language learning strategies) like social, metacognitive, and cognitive strategies and respondents' ability to think critically, though there has been no significant relation found regarding critical thinking and compensation, memory, and effective strategies. Ghanizadeh and Moafian (2011) attempted to uncover the relation between critical thinking skills and emotional intelligence. They also intended to investigate the role of gender and age as moderating variables. They gave the participants a critical thinking assessment questionnaire to a number of 85 participants studying at university. The results revealed that among different aspects of EQ, the one who received the highest rate of correlation with critical thinking (CT) was flexibility and social responsibility. Moreover, it was found that age and gender did not have any effect on learners' EQ and CT.

Tabačková (2015) elaborated on the issue of how to improve students' critical thinking by way of reading a literary text as challenging the critical thinking ability of the reader is in the heart of a literary text. The study expressed that as an echo of the world outside the classroom or the real-life a literary text can be considered an impressive means or a way of preparing inside the classroom students for thinking in a world outside the class. Haghani et al. (2011) too conducted a research to examine the relation between emotional intelligence and the critical thinking skills of Iranian medical students. Based upon the obtained results, the average score of students' inductive reasoning was definitely lower than their deductive reasoning scores. Additionally, no significant relationship between emotional intelligence and critical thinking skills was found. Also, Tuzlukova and Al-Busaidi (2020) carried out a study to inquire into EFL teachers' beliefs about the importance of critical thinking in language teaching, their ideational definitions of critical thinking, and also possible relations between different methods of teaching language and critical thinking. What the final outcomes indicated was that the highest majority of the instructors (96%) acknowledged the chief role which critical thinking plays in efficient language education. Besides, the findings implied the instructors' precedence to line up their methods of teaching with Ennis' critical thinking categories regarding the functional-communicative approach.

Nosratinia et al. (2014) did a study to assess the relationship between students' use of strategies of language learning and their skills to think critically. For this purpose, they randomly selected 250 undergraduate students studying literature and translation of the English language. They administered Oxford's Strategy Inventory for Language Learning and Critical Thinking (CT) questionnaires to the participants. The correlation analysis revealed a significant relation between the level of critical thinking of the participants and their language learning strategies use. The resulted data from the regression analysis also showed that social strategies, memory strategies, compensation strategies, and metacognitive strategies are indicative of skills of thinking critically.

Kamgar and Jadidi (2016) investigated the relation of critical thinking of Iranian EFL learners and their self-regulation based on their ability of reading comprehension among different levels. The results revealed a significant statistical correlation for those who have higher critical thinking skill levels among advanced and intermediate students, whereas there was no significant relationship between their self-regulation and their reading comprehension ability for those advanced students.

Azin and Heidari Tabrizi (2017) examined the relation between the level of critical thinking and Iranian English translation students' translation ability. Furthermore, the distinction between the critical thinking ability of females and males was scrutinized. The findings revealed that gender does not play any role in the skills of critical thinking among Iranian EFL students. Moreover, the results pointed out that the students with higher critical thinking skills were more successful in their performance of translation.

Zare and Biria (2018) investigated the possible relationship between the critical thinking skills of ESP learners and their reading comprehension abilities. What the findings pointed out was that there was a strong and positive correlation among the level of ability of critical thinking regarding ESP learners and their ability in reading comprehension. Furthermore, the findings indicated that ESP students who were viewed as high critical thinkers significantly exceeded those who had lower levels of critical thinking on their reading comprehension test.

Finally, Marboot et al. (2020) explored the relationship between Iranian EFL students' metacognitive online reading strategies and CT skills and the possible relationship between Iranian EFL students' metacognitive online reading strategies in academic texts with their CT skills. The findings of their study revealed a positive and significant relationship between metacognitive online reading strategy use and CT skills.

As can be observed in the above-mentioned studies, critical thinking-based teaching strategies have not been touched. This is what the present study intends to investigate in relation with EFL instructors' different variables.

## Methodology

### Study Setting

This study was conducted during the 2019-2020 school year in 35 different high schools in four different provinces of Iran (Yazd, Lorestan, Fars, and Kordestan). Four provinces were chosen because they are areas in Iran with ethnical and geographical diversity and various economic conditions. As a result, we deal with different groups of teachers and diverse teaching and learning settings.

### Participants

The sample for this study comprised 120 EFL teachers (65 females and 55 males) selected through purposeful sampling from 35 different high schools mentioned above. They represented a diversity of teachers as well as different teaching and learning conditions.

### Instruments

#### Observations

As a part of the educational system in Iran, there are some educational departments for each high school course in each province with members who visit various high schools in different districts, observe classes and make sure the teachers exactly follow the pre-determined methodology, teaching approaches, and methods prescribed by the council of education and

training. As the colleagues of the researcher, the managers of the English departments of education and training organization in the above-mentioned provinces accepted to cooperate in the process of data collection by meeting the high school EFL teachers who used critical thinking-based teaching strategies, to gather such demographic information as their identity, email address, and phone number, etc.

### **Questionnaire**

The survey questionnaire which was put to use in this research was adopted from Barnhill (2010) who explored the Liberal Arts faculty members' perceptions about the ability to think critically. Barnhill himself had evaluated the content validity of the questionnaire. Cronbach's alpha coefficient was used to measure the reliability of the instrument in this study which was calculated to be 0.96.

The questionnaire items were reduced to 50 to be appropriate for a study in the context of Iran's educational system. It comprised two parts: demographic data of respondents, and a list of different critical thinking-based teaching strategies. The first part consisted of the teachers' university degree, extent of teaching experience, gender, and the number of critical thinking in-service training courses they had attended. The second part contained 50 critical thinking-based teaching strategies, and a Likert scale to measure their frequency of use

### **Interview**

Ten teachers selected from among the participants were interviewed for the purposes of the study. The interview questions were developed by the researcher. Each interviewee was asked some questions concerning his or her understanding of the concept of critical thinking, their frequency of use, and the effectiveness of critical thinking-based teaching strategies.

### **Procedures**

#### **Data Collection Procedure**

To collect the data, first the questionnaire was administered during the Fall 2019, after obtaining approval from General Administrations of Education and Training in the mentioned provinces. Before the instrument administration, a notification was sent to the participants to provide some background information for the research via email. Afterward, the survey along with the form of agreement was sent to invite them to participate through email. The process of collecting data took the researcher about six weeks' time. The questionnaire included a request to carefully do the job, a note on the allotted time, clarification about confidentiality of the research, and researcher's gratitude in order to intensify the participants' motivation to answer the questions. Finally, the feedback obtained from the participants were categorized for the purpose of data analysis.

#### **Data Analysis Procedure**

After the process of data collection, quantitative data analysis started. The data file was fed into the SPSS (Statistical Package for the Social Sciences), Cronbach Alphas were utilized to calculate the questionnaire items internal consistency and the instrument reliability, and means, frequencies, rankings, and standard deviations were used for descriptive analysis.

## **Results and Discussion**

### **Frequency of Use of Strategies**

Based on the analysis of the obtained data, it was revealed that critical thinking-based strategy was the most frequently-used strategy exploited by teachers in their classes. This is shown in Table 1 below, together with other obtained results.

**Table 1**

*Five Highest Rankings of CT-Oriented Strategies for Teaching Based on Frequency of Use*

Item	Critical Thinking Oriented Strategies for Teaching	Rank	<i>M</i>	<i>SD</i>
1	Questioning and challenging students to consider all views. (Socratic Method)	1	4.38	0.780
4	Inquiring the students to analyze information by identifying differences and similarities, comparing, summarizing and conclusions	2	4.32	0.793
7	Discussions in small groups along with some specific assigned tasks	3	4.22	0.755
50	Solving problems with various solutions via group work	4	4.16	0.908
15	Environments in which some questions may be asked by the students that may go beyond my closest expectations	5	4.11	0.983

### Exploratory Factor Analysis

To observe all the constructs or factors for the 50 teaching strategies investigated in this research, EFA (exploratory factor analysis) was utilized. Exploratory factor analysis (EFA) is a multivariate statistical method formulated to ease the predication of uncovered variables that are felt to form correlational patterns in new scopes of covered variables. Also, Parallel Analysis was done using Brian O'Connor SPSS Syntax after some phases of item reduction on selected factors to find out the types of factors kept. The results revealed that all the 50 strategies can be put into four factors comprising 25 items. Fundamental ideas of the uses of the aforementioned strategies which integrate critical thinking into the teaching process are described by the themes of these four factors. Ten items are included under the theme of 'assesses practically', which is represented by factor 1. The second factor, which is called 'team-work expertise' comprises three items. The third one, which is described as 'reflective engagement' is comprised of five items. The fourth one, which was named as 'questions and conflicts', includes seven items clustered as factor 4. The source of inspiration for labeling these four factors was Timpson and Doe's book (2008) on using critical thinking in teaching.

### Research Question 1

To find out whether there is a significant relationship between Iranian high school EFL teachers' frequency of use of critical thinking-based teaching strategies and their years of experience in teaching, correlation coefficients were calculated. It was revealed that teaching experience negatively correlates with the frequency of use of the third factor 'reflective engagement',  $r(120) = -0.86, p = .005$ ; and with the frequency of use of the fourth one 'questions and conflicts',  $r(120) = -0.78, p = .005$ . This indicated that teachers who have more experiences may use these strategies less commonly than less experienced teachers. Table 2 below clarifies the point.

**Table 2***Inter-correlations between Frequency of Use and Years of Experience in Teaching*

	Factor	M	SD	Years of Experience in Teaching			
				1	2	3	4
Frequency of Use	1. Assesses practically	2.83	0.83	0.02	-	-	-
	2. Team-work expertise	3.53	0.97	-	0.07	-	-
	3. Reflective engagement	3.56	0.82	-	-	-0.86**	-
	4. Questions and conflicts	3.29	0.72	-	-	-	-0.78*

\* $p < .005$ , \*\* $p < .01$ 

The above finding in relation to the first research question, indicating a negative relationship between the teachers' duration of teaching experience and their frequency of use of the third and fourth factors, is consistent with previous studies which found that more experienced teachers use EFL critical thinking-based strategies less frequently. Actually, teachers' utilization of critical thinking-oriented strategies was not manifested by the level of experience among them. This is why experience without any updates or revisions would not cause any difference in teachers' work on teaching strategies in Willingham's (2008) terms.

**Research Question 2**

To see if there is any significant relationship between Iranian high school EFL teachers' frequency of use of critical thinking-based teaching strategies and their higher university degrees, Pearson correlations were worked out to inspect the inter-correlations among the factors in which the linearity assumption was not noticeably broken. Table 3 below shows the obtained results.

**Table 3***Inter-correlations between Frequency of Use and Teachers' Higher University Degree*

	Factor	M	SD	Highest University Degree Received			
				1	2	3	4
Frequency of Use	1. Assesses practically	3.26	0.68	0.07	-	-	-
	2. Team-work expertise	3.54	0.74	-	-0.03	-	-
	3. Reflective engagement	3.41	0.69	-	-	0.04	-
	4. Questions and conflicts	3.38	0.61	-	-	-	-0.02

\* $p < .005$ , \*\* $p < .01$ 

According to the results in Table 3, there was no significant relationship between the teachers' frequency of use of critical thinking-based teaching strategies and their university degrees. This is in line with Khabiri and Firooz (2012), who came up with the finding in their research that teachers' university degree neither have any relationship with their perceptions of such strategies, nor with the process of promoting critical thinking among students.

### Research Question 3

To assess whether there can be a significant relationship between Iranian high school EFL teachers' frequency of use of critical thinking-based teaching strategies and the number of critical thinking in-service training courses they had attended, correlations were with respect to the previously-described four factors. In fact, the sum totals of means for both factors related to question three were calculated. Each of the four factors was significantly correlated as it is shown in Table 4 below.

**Table 4**

*Inter-correlations between Frequency of Use and the Number of CT In-service Training Courses Attended*

	Factor	M	SD	Critical Thinking In-service Training Course			
				1	2	3	4
Frequency of Use	1. Assesses practically	2.98	0.82	0.59**	-	-	-
	2. Team-work expertise	3.54	0.94	-	0.79**	-	-
	3. Reflective engagement	3.36	0.81	-	-	0.60**	-
	4. Questions and conflicts	3.33	0.73	-	-	-	0.74**

\* $p < .005$ , \*\* $p < .01$

The results in Table 4 reveal that was a significant relationship between the frequency of use of critical thinking-based teaching strategies and the number of critical thinking in-service training courses attended by Iranian EFL teachers. This is consistent with the finding of Marboot et al. (2020), although they additionally claim that there may be some other strategies that can be utilized by teachers without any instruction.

### Conclusions

Some valuable information was obtained in this study which may be turned out to be worthwhile for the Iran's education and training system. The results depicted that Iranian high school EFL teachers possess knowledge and awareness about blending critical thinking into their process of teaching as a plan of action to motivate the students towards experiencing critical thinking in their learning procedure. At the same time, the results disclosed the fact that critical thinking should still be reinforced in Iran's education and training system and much more in this respect should be presented to Iranian high schools. In fact, Iran's education and training system must be open to suggestions about this challenge and must reform the current study programs to build on new perceptions and enhance the present knowledge and awareness of critical thinking-based teaching strategies. One main implication of this study is to recommend many more critical thinking in-service training courses for the teachers. These courses should be organized in accordance with the extent of teachers' knowledge and awareness of critical thinking. Particularly, the content of the courses should be directed to the significance of critical thinking and its relation with students' learning issues.

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