Iranian High School EFL Teachers' Perception and Frequency of Use of Critical Thinking Based Teaching Strategies and their inter-relationship*

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Abstract

This study intended to elaborate on critical thinking based teaching strategies high school EFL teachers in Iran integrate into their teaching process. An edited version of an email-based questionnaire by Barnhill (2010) has been put into use to distribute the teaching strategies survey in four different provinces (Yazd, Lorestan, Fars and Kordestan). One hundred and twenty teachers answered it completely showing 75.94 percent of response rate .Not an empirical layout was utilized to investigate the most effective and frequently used strategies and the relations between the two variables of frequency of use and perception of effectiveness. Means, frequencies, standard deviations, percentages, exploratory factor analysis (EFA), correlation coefficient, and five-point Likert scale were utilized for the purpose of the data analysis. The items rank-ordering pointed out that among the 50 items "questioning and challenging students to consider all views" was rated as the most frequently used and "creative projects in-class involving various materials" was distinguished as the most effective. From 50 strategies, EFA determined four factors reducing the 50 critical thinking based teaching strategies. The findings showed a positive and direct relation between perception of effectiveness and frequency of use for every one of the four variables.

Keywords: Critical thinking (CT), Critical thinking based teaching strategies, EFL teachers of Iranian high schools, Teaching English as Foreign Language (TEFL)

1. Introduction

The process of pedagogy and acquisition may be stimulating and motivating if educators understand the way of conveying data productively and reacting to the environment positively (Hawley, 2007). The fundamental goal of meaningful education is to teach students the skill of how to think in a higher order (Paul, 1993).

New directions in the educational domain emphasize the significance of critical thinking skill and its function in every student's life generally and in his/her academic success specifically. Abilities of analyzing, reasoning effectively, solving problems, and making decisions in life and work should be regarded as the needs of every individual all of which are included in critical thinking.

As Paul & Elder (2008) explained, critical thinking is a style of thinking which permits individuals to examine and analyze various viewpoints of an issue, and then incorporate it to a procedure of making decisions. As Halpern (1999) pointed out, 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.

According to Miliron and De Los Santos (2004) critical thinking skills are essential traits for high school students' development. As suggested by UNESCO International Institute for Educational Planning all higher educational and training documents in middle-east including Iran must combine abilities which are compatible with current demands of the labor market, the most dominant of them is critical thinking .In a general manner, The Fundamental Reform Document of Education of Iran (FRDE) promotes the programs and curriculums according to which high school students should be arranged to completely employ their skills and knowledge well-matched with creativity, critical thinking, and problem solving. Therefore, domestic and global requirements have imposed us to progress by implementing and planning critical thinking in our prevalent and existing policy.

As Rudd (2007) clarified, high school teachers can be considered as a part of the main supporters of the development of critical thinking. 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. They should be ready to change the method and techniques of their teaching if some other ones are understood to be much more applicable, that's why the teachers are not accounted just as providers of information, but they are also considered as promoters of critical thinking.

Every high school teacher should encourage the development of the skills of critical thinking among students that is fundamental for nowadays university studies. The job oriented skills require the critical thinking development including creativity, problem solving, and decision making which are the most important qualities wanted by industry and business market (Rojewski, 2002).

Thus, based on Rudd (2007) high school educators should be prepared enough to teach critical thinking properly. Paving the way of this purpose, according to Duron, Limbach, & Waugh (2006), students along with teachers may raise their abilities to think to become problem solvers, independent thinkers, and better learners.

Furthermore, active teaching and conscious learning with the concentration they put on critical thinking skills may lead to the pupils' achievement in any domain, especially learning a foreign language in which a synthesis of cultural, political, and social matters is included (Arends, 1998).

Experts such as (Tarvin and Al-Arishi (1991), Davidson (1994), and Chamot, (1995)) have emphasized the significance of raising critical thinking skills among the students of classrooms of foreign language. Based on Curry (1999), a classroom for learning English can be a suitable setting for critical thinking merged exercises in which social authorization can be encouraged by questioning and challenging. Some professionals of the educational domains believe that critical thinking should be stimulated, and some experts are in the

same opinion that it is possible to be instructed. After all, trying to think critically and to teach critical thinking is evenly demanding. So, the teachers need to use appropriate teaching strategies to pave its way.

The language teaching strategies use might be in relation with some personal variables including age, proficiency level, and gender. It is also possible to look for some connections between them and critical thinking as a main cognitive factor, as another main aspect.

According to Rabi'ee (2010), considering Iranian EFL classes, it is detailed that class activities like reviewing facts, characterizing basic ideas, rewriting the sentences, expressing the main existing concepts, and summarizing the texts were popular in most of the English classes in Iran's schools. These types of activities, in accordance with Bloom's taxonomy of educational objectives (1956), are viewed as lower order thinking skills. In this manner, according to Tabatabaei and Parsafar (2012) Iranian learners of EFL acknowledge beliefs without considering them in the forms of truthful pieces of evidence.

It appears that the number of researches which organized the noteworthy function of critical thinking oriented teaching in English classes, as an imperative variable that may influence the process of language learning, is uncommon whereas it appears to be an instance of the serious conflicts which second language teachers confront in their EFL classrooms in Iran.

Observing the reality that language teaching strategies encourage learning and results in a more successful and preferable performance when the students are learning another language, this research looks for a way to empirically reveal the relationship between language teaching procedures and critical thinking. Hence, it is worth clarifying the critical thinking issue, and recognizing its incorporation to language teaching strategies used in L2 context.

Exploring the sorts of teaching strategies which are used frequently by Iranian high school EFL teachers and probing their perceptions

about critical thinking based teaching strategies effectiveness in Iran and their inter-relationship is the study chief objective.

The below research questions are formed to realize or know the variables that affect Iranian high school EFL teachers' use of critical thinking based teaching strategies.

The below-mentioned questions drive the inquiry:

1. What kind of teaching strategies do Iranian high school EFL teachers most frequently use to motivate students for critical thinking?

2. What critical thinking based strategies for teaching do Iranian high school EFL teachers recognize as effective in the process of teaching?

3. Is there any significant relationship between perception of effectiveness and frequency of use of critical thinking based teaching strategies by Iranian high school EFL teachers?

2. Literature Review
Below, several research conducted on the critical thinking subject would be reviewed:

Tabackováa (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.

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%) acknowledge the chief role which critical thinking plays in the 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.

Nikoopour, Farsani, and Nasiri (2011) probed 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 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 affective 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 by Watson and Glaser and the BarOn's EQ-I questionnaire to a number of 85 participants studying at university. The results of ANOVA and Pearson correlation depicted that among different aspects of EQ, the one which 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.

Haghani, Aminian, Kamali, and Jamshidian (2011) managed a research to examine the relation between emotional intelligence and the critical thinking skills of Iranian medical students. Based upon the outcomes resulted, the average score of students' inductive reasoning was definitely lower than their deductive reasoning scores. Additionally, any kind of significant relation between emotional intelligence and critical thinking skills could not be found.

Hasanzadeh and Shahmohamadi (2011) accomplished a research to explore the relation between learning strategies and emotional

intelligence at a university level. To put it into practice, 100 students of university from various study fields were chosen accidentally. Two sets of questionnaires including LASSI (Learning and Study Strategies Inventory) and Bar-On questionnaire were administered to the respondents for the purpose of data collection. The findings showed a significant relation regarding students' learning strategy use and the total emotional intelligence of them in both males and females. Moreover, they did not find any significant relations between the students' learning strategies, field of study, and their emotional intelligence.

Nosratinia, Ghanbari Asiabar, and Sarabchian (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 selected randomly 250 undergraduate students studying literature and translation of 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.

Mahmoodi and Dehghannezhad (2015) investigated the ending results of critical thinking skills teaching on the participants' different learning strategies use among varying levels of EQ. Another aim of the study was to explore the three variables and their relationship. They administered 4 sets of instruments (an adaptation of Oxford's (1990) SILL (Strategy Inventory for Language Learning), Oxford Placement Test, Bar-On model of Emotional Quotient inventory assessing emotional intelligence (EQ-I), CCTST (California Critical Thinking Skills Test)) to 88 respondents studying English at institutes in Shiraz, Iran. The results of the study pointed out that the critical thinking skills taught to students had a significant impact on their use of different learning strategies among varying levels of EQ. While,

they did not report any significant difference between participants' language learning strategies scores with low and high levels of EQ, but a significant and positive relationship was reported between the participants' CT and EQ level and their use of language learning strategies.

Danaye Tous and Haghighi (2016) investigated the distinction between the performance of female and male learners of EFL in Iran regarding different aspects of the CCTST. No significant difference between females and males on the subscales quantified; i.e. deductive reasoning, inductive reasoning, analysis, evaluation, and inference was shown as the result.

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 level from advanced and intermediate students, whereas there has not been any significant relationship between their self-regulation and their reading comprehension ability but for those students of the advanced group learners.

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 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 prosperous in their performance of translation.

Alongside the similar ways of research and utilizing the similar kinds of instruments, 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, these 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.

This can be regarded as a critical study that's why it evaluates the prevalent strategies of teaching among Iranian EFL teachers' regarding critical thinking, a significant domain which necessitates much more investigation. The earlier researches conducted on the issue of critical thinking put their emphasis on its level among students and the effect it has on their process of learning .Rare researches have been done on critical thinking with this new point of view, nowadays an absence of technical information regarding critical thinking is still felt among teachers and critical thinking based teaching strategies they use in their teaching process. This work of research adjoins some significant literature and eases the process of confirmation of teaching strategies based on critical thinking.

3. Methodology
3.1. Participants
The sample for this study included 120 teachers (65 females and 55 males) teaching EFL during the 2019-2020 school year from 35 different high schools in four different provinces (Yazd, Lorestan, Fars and Kordestan). The four provinces are chosen because they are areas in Iran with a diversity of ethnicities and geographical and economic conditions. They thus represent a diversity of teachers and the teaching and learning conditions in the area. The participators had to be chosen by means of stratified purposeful sampling out of the population of high school teachers in Iran.

As purposeful sampling is broadly used in qualitative or quantitative researches for the purpose of selection and recognition of fully informative cases for the most efficient use of limited resources (Patton, 2002), this method was used for selecting and recognizing groups of individuals or individuals that are specifically experienced with or aware of an interesting phenomenon (Cresswell & Plano Clark, 2011).

3.2. Instruments
3.2.1. Observations
As a part of educational system in Iran, there are some educational departments for each high school course in each province with members who go to various high schools in different districts to observe classes and make sure the teachers exactly follow the methodology, teaching approaches and methods prescribed by the book writers and the council of education and training. As the colleagues of the researcher, the managers of the English departments of education and training organization in these provinces accepted to cooperate in the process of data collection by selecting the participants among high school EFL teachers who use critical thinking based teaching strategies and gathering some demographic information like their identity, email address and phone number.

3.2.2. Questionnaire
The survey questionnaire which was put to use in this research was adapted from a preceding one by Barnhill (2010) that explored the liberal arts faculty members' perceptions about the ability to think critically by means of the Delphi technique. The questionnaire was derived and adjusted from 82 items to 50 items which were appropriate for a study in context of Iran educational system. The questionnaire of this research comprised two parts: first, demographic data of respondents and second, a list of different critical thinking based teaching strategies. As Dillman, Smyth, and Christian (2009) stated, the framework of the survey questionnaire had to be organized in a reasonable arrangement to make sure people can answer the questions of the research easily.

The questionnaire primary section, including demographic data, comprised of the highest university degree received, levels of teaching experience, gender, and the number of critical thinking in-service training courses attended.   Regarding the second part of the questionnaire, the survey contained 50 critical thinking based teaching strategies including a Likert scale used measuring their frequency of use comprising the five points of (1) Never, (2) Seldom, (3)

Sometimes, (4) Frequently, and (5) Almost Always. In this research, every one of the critical thinking based teaching strategies was evaluated for the high school EFL teachers' perceptions of effectiveness.

3.3. Data collection

The questionnaire was applied throughout the fall of 2019 after obtaining the approval from General Administrations of Education and Training in those provinces. Before the instrument administration, a notification was sent to the respondents to give some background and an introduction for the research via email. Utilizing an email electronic distribution system permitted the participants to answer to the questions. Afterwards, the survey along with the form of agreement was sent to invite the respondents to participate through email. The process of collecting data took the researchers about six weeks of time plus one reminder which was sent by them. After the sixth week a thank you note was emailed. The questionnaire comprised of a request to the respondents to be involved in filling out the forms, giving a time required estimation, a clarification about confidential quality of showing positive regard, and providing thankfulness to intensify the respondents' motivation to answer the questions provided (Dillman et al., 2009). When the researchers received all feedback from the respondents, their surveys were categorized for the purpose of analyzing the data.

3.4. Data Analysis

After the completion of the process of data collection the process of quantitative data analysis started. Along with the procedure of data collection, the data management was directed at the same time. After putting the data file onto the SPSS (Statistical Package for the Social Sciences) the data analysis began. Cronbach Alphas were utilized to calculate the questionnaire items internal consistency and the instrument reliability. As it is suggested by Morgan, Leech, Gloeckner, & Barrett (2007) having the least Cronbach alpha value of 0.70 can supply appropriate backing for the reliability of internal consistency. Means, frequencies, rankings, and standard deviations

were used firstly for descriptive questions analysis referring to the two initial research questions. Afterwards; the third one is analyzed using Pearson correlation coefficient, that's why it is an associational question.

4. Results and Discussion

4.1. Research question 1

What kind of teaching strategies do Iranian high school EFL teachers most frequently use to motivate students for critical thinking?

This question inquired of the participants to rank their level of use of each strategy/item on a Likert scale comprising five points from never to almost Always. The critical thinking based strategy for teaching which was used most often with the Mean of 4.38 and Standard Deviation of 0.780 was (item 1) 'Questioning and challenging students to consider all views (Socratic Method)' based on means and the analysis done. Item 4 'Inquiring the students to analyze information by identifying differences and similarities, comparing, summarizing and conclusions' with the Mean of 4.32 and Standard Deviation of 0.793 was the second highest one. The third one was item 7 'discussions in small groups along with some specific assigned tasks', Mean = 4.22, Standard Deviation = 0.755. The means and standard deviations of frequency of use of the five highest rankings of CT oriented strategies for teaching were represented in Table 1.

Table 1

Five Highest Rankings of CT Oriented Strategies for Teaching based on Means of Frequency of Use

Item	Critical Thinking Oriented Strategies for Teaching	Rank	M	SD
1	Questioning and challenging students to consider all views. (Socratic Method)	1	4.38	0.780
4	Inquiring the students to analyze	2	4.32	0.793

	information by identifying differences and similarities, comparing , summarizing and conclusions			
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

On basis of the analysis completed , item 1 was the critical thinking based strategy for teaching which was used most often as open-ended questions show some constructive advantages through learning processes such as developing creative ideas and suggestions, forming relations with personal life, and encouraging thinking critically. Furthermore, most of the highly graded strategies were related with asking questions with various intentions, that's why persons may inquire based on various stages of comprehension they have, that can motivate more investigation. Asking questioning by teachers paves the way for students to recognize reasoning that may be coherent and logical before their phase of decision making which is an acceptable preparation for critical thinking.

Another remarkable finding of the first research question was that 'identifying weaknesses and strengths of an author's argument and thesis' was the least frequently used of all the 50 strategies. In spite of the fact that this item was viewed as the least frequently used one by teachers, it should not be left out in view of other proofs suggesting its significance in critical thinking like Scott's (2008) which emphasized that in addition to improving skills of communication, thinking critically could be advanced by identifying weaknesses and strengths of a debate frame work.

4.2. Research question 2

What critical thinking based strategies for teaching do Iranian high school EFL teachers recognize as effective the process of teaching?

This question requested the participants to determine the degree of perception of effectiveness they discover in every strategy for teaching based on critical thinking. According to the level of means, the analysis stated that the participants perceived item 5 'Creative projects in-class involving various materials' as the most efficient critical thinking based strategy for teaching with the Mean of 4.12 and Standard Deviation of 0.710. Item 49 'Students' workshops on projects' was the second highest with the Mean of 3.96 and Standard Deviation 0.835. The third one was determined to be item 6 'inquiring the students to put what they have formerly mastered into practice into new situations using some questions', Mean = 3.88, Standard Deviation = 0.725. The highest mean scores for the Iranian high school EFL teachers' perception of effectiveness of five highest rankings of critical thinking oriented strategies for teaching were represented in Table 2.

Table 2

Five Highest Rankings of CT Oriented Strategies for Teaching based on Means of Perception of Effectiveness

Item	Strategies for teaching based on CT	Rank	M	SD
5	Creative projects in-class involving various materials	1	4.12	0.710
49	Students' workshops on projects	2	3.96	0.835
6	Inquiring the students to put what they have formerly mastered into practice into new situations using some questions	3	3.88	0.725

| 24 | Announced in-class quizzes on vocabulary, terms, and logic | 4 | 3.62 | 0.749 |
| 15 | Environments in which some questions may be asked by the students that may go beyond my closest expectations | 5 | 3.48 | 0.812 |

Among these 50 strategies for teaching based on critical thinking, teachers perceived item 5 as the most effective strategy included in this study. Correspondingly, it encourages student-oriented style of learning that permits the pupils to go one step forward to become self-ruling in creating among-peers incorporated activities supported by a research directed by Gokhale (1995) which studied some students at Western Illinois University stating that students gain critical thinking skills through illustrating their problem solving ability and discussion. Furthermore, as the ranking shows most of the highly graded strategies teachers recognized to be efficient in the process of teaching included in-class group interactions implying that students obtained their skills of critical thinking through expressing their problem solving ability and discussion. Based on the personal experiences of the researchers class size may effect teachers' willingness or ability to integrate such exercises into their process of teaching.

The respondents ranked 'Emphasizing on students to find an argument correct based on its main logical structure comparing with agreeing it based on "authority" or some other codes' as the least effective teaching strategy. Teachers' underestimation of integrating argument-oriented interactions can be owing to this fact that the levels of educational system proposed by Iranian high schools, and possibly the low ability of critical thinking level among Iranian high school students.

4.3. Exploratory factor analysis

To observe all the numbers of constructs or factors from 50 strategies of teaching in this research EFA (exploratory factor analysis) was

utilized. For the data to be analyzed answering the study research questions the results of the EFA were used. 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. Multiple regression and partial correlation theory are used by EFA to point out sets of observed or manifest variables in the sense of linear functions of other sets of unobserved or latent variables.

Parallel Analysis was done using Brian O'Connor SPSS Syntax after some phases of items reduction on selected factors to find out the types of factors kept. The results stated 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 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' including seven items clustered as factor 4. The source of inspiration for labeling these four factors was Timpson and Doe's book published in 2008 regarding using critical thinking in teaching.

4.4. Research question 3

Is there any significant relationship between perception of effectiveness and frequency of use of critical thinking based teaching strategies by Iranian high school EFL teachers?

To assess the answer of this question, correlations were worked out. Those previously-mentioned four factors presented both factors regarding the teachers. For both variables, the sums of means were calculated and the analysis showed that both of them were distributed normally. Each of these four factors was significantly correlated as it is depicted in Table 3. These four factors are each correlated significantly at the level of 0.01 (2-tailed). As the correlation coefficients guidelines, mentioned by Horowitz (1981) expressed the

different levels include: 0-0.20 which points out a minimal correlation, 0.20 - 0.40 that equals a low correlation, 0.40 - 0.60 that equals a moderate one, 0.60 - 0.80 which equals a considerable one, and 0.80 - 1.00 that shows the highest level. According to which the size of the effect of factor 2 'team-work expertise' between the two factors was considerable (r (120) = 0.73, p < .001). Whereas other factors comprising 'assesses practically' (r = 0.59) 'reflective engagement' (r = 0.56); and 'questions and conflicts' (r = 0.51) were figured out to be moderately correlated. Thus, a direct and positive relationship was determined to exist between the two variables for every one of these four factors.

Table 3

Inter-correlations between Use Frequency and Effectiveness Perception of CT based Strategies for Teaching

	Factor	M	SD	Effectiveness Perception			
				1	2	3	4
	1. Assesses practically	2.98	0.82	0.59**	-	-	-
Use Frequency	2. Team-work expertise	3.54	0.94	-	0.73**	-	-
	3. Reflective engagement	3.36	0.81	-	-	0.56**	-
	4. Questions and conflicts	3.33	0.73	-	-	-	0.51**

The use frequency of the critical thinking based strategies for teaching by Iranian high school EFL teachers was illustrated to show a direct and positive relationship with their perceptions of the strategies' effectiveness. Furthermore, since the decision making process on the effectiveness of a strategy is complicated, the teachers may figure out that a strategy is useful after they have attempted and found it matching with the process of learning among students. This idea has already been confirmed by a study by Halpern (2001) stating that in practical applications, different ideas of the usefulness of a strategy

are connected with lots of variables comprising goals of learning process and different kinds of evaluation used in the context of teaching plan.

5. Conclusions and Implications

This research utilized not an experimental model and it was carried on throughout the school year 2019-2020. The survey was delivered using email service to 158 teachers at 35 different high schools. The questionnaire survey encompassed four demographic questions and 50 five-point-Likert type scale strategy items concerning critical thinking based teaching strategies. Among them, one hundred and twenty teachers replied both of the two sections (demographics and teaching strategy items) completely. So the responses of teachers who completed the whole questionnaire were put to the SPSS software for more analysis. This group of respondents was depicted to be portraying of the wider one of which 38 teachers did not answer both demographics and teaching strategies items entirely. Based on Dillman et al (2009) the response rate which was 75.94 percent is considered to be adequate .The time period of data collection took six weeks, comprising a notification email, a questionnaire along with form of agreement, one reminding email, and also a thank you letter email. The data were put into analysis using Cronbach's alpha ranking, Exploratory Factor Analysis (EFA), frequencies, means, standard deviations, percentages, and correlation coefficient. Based on the results, regarding the 50 strategy items the Cronbach's alphas were calculated and determined to be 0.98 for perception of effectiveness and frequency of use. A high internal reliability was demonstrated according to these statistics.

Regarding the first and second research questions, among the 50 evaluated critical thinking based teaching strategies, the Socratic Method was ranked to be the most frequently used ,whereas 'Creative projects in-class involving various materials' was the most effective strategy perceived by high school teachers. For question three, the results pointed out a direct and positive relation between the two variables of items/strategies for every one of these four factors.

The results depicted that Iranian high school EFL teachers have knowledge and awareness about blending critical thinking into their process of teaching as a plan of action to motivate the students experiencing critical thinking in their learning procedure. Nonetheless, the results and findings express that critical thinking should be reinforced within Iran education and training system and presented much more by Iranian high schools.

References

Arends, R. I. (1998). *Learning to teach (*4th ed*.)*. New York, NY: McGraw – Hill.

Azin, N., & Heidari Tabrizi, H. (2017). The Relationship between critical thinking ability of   Iranian English translation students and their translation ability. *Theory and Practice in Language Studies*, *6*(3), 81-95.Retrieved from http://www.academypublication .com/php/tpls.

Barnhill, E. J. (2010). Scrutinizing critical thinking based strategies: Perceptions of liberal arts faculty (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global Database. (UMI No. 3421027)

Bloom, B. (Ed.). (1956). *Taxonomy of educational objectives, handbook I: Cognitive domain*. New York, NY: David McKay Company.

Chamot, A. (1995). Creating a community of thinkers in the ESL/EFL classroom. *TESOL Matters*, *5*(5), 1-16.

Creswell, J.W. & Plano Clark, V.L. (2011). *Designing and Conducting Mixed Methods Research*, (2nd ed.). London, England: Sage.

Curry, M. J. (1999). Critical thinking: Origins, applications, and limitations for post-secondary students of English as a second language (ERIC Document Reproduction Service No. ED436976).

Danaye Tous, M. & Haghighi, S. (2016). Developing critical thinking with debate: Evidence from Iranian male and female students. *International Journal of Research Studies in Language Learning*, *3*(2), 55-68.

Davidson, B. (1994). Critical thinking: A perspective and prescriptions for language teachers. *The Language Teacher*, *18*(4), 20-26.

Dennis, D. H., & Hudson, C. C. (2007). Workforce education and two important viewpoints. *Journal of Industrial Teacher Education*, *44*(2), 89-98.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: John Wiley and Sons.

Duron, R., Limbach, B., & Waugh, W. (2006). Critical thinking framework for any discipline. *International Journal of Teaching and Learning in Higher Education*, *17*(2), 160-166.

Ghanizadeh, A., Moafian, M. (2011). Critical thinking and emotional intelligence: investigating the relationship among EFL learners and the contribution of age and gender. *Iranian Journal of Applied Linguistics, 14*(1), 23-48.

Haghani, F., Aminian, B., Kamali, F., & Jamshidian, S. (2011). Critical thinking skills and their relationship with emotional intelligence in medical students of introductory clinical medicine course in Isfahan University of medical sciences. *Iranian Journal of Medical Education*, 10(5), 48-59.

Halpern, D. F. (1999). Teaching for critical thinking: Helping college students develop the skills and dispositions of a critical thinker. *New Directions for Teaching and Learning*, *80*, 69-74.

Halpern, D. F. (2001). Assessing the effectiveness of critical thinking instruction. *The Journal of General Education*, *50*(4), 270-286. doi:10.1353/jge.2001.0024

Hasanzadeh, R., & Shahmohamadi, F. (2011). Study of emotional intelligence and learning strategies. *Procedia - Social and Behavioral Sciences*, 29, 1824 –1829.

Hawley, W. D. (Ed.). (2007). *The keys to effective schools: Educational reform as continuous improvement* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Horowitz, G. (1981). *Sadistic statistics: An introduction to statistics for the social & behavioral sciences*. Wayne, NJ: Avery Publishing Group.

Kamgar, N. & Jadidi, E. (2016). Exploring the relationship of Iranian EFL learners' critical thinking and self-regulation with their reading comprehension ability .*Procedia - Social and Behavioral Sciences, 232*, 776-783. doi:10.1016/j.sbspro.2016.10.105

Mahmoodi, M. H., & Dehghannezhad, M. (2015). The effect of teaching critical thinking skills on the language learning strategy use of EFL learners across different EQ levels. *Journal of English Language*

Teaching and Learning, *7*(16). 55-84. Retrieved from https://journals. tabrizu.ac.ir/article_4410.html

Miliron, M. D. & De Los Santo, G. E. (2004). Making the most of community colleges on the road ahead. *Community College Journal of Research and Practice*, *28*(2), 105-122. doi: 10.1080/10668920490253582.

Morgan, G. A., Leech, N. L., Gloeckner, G. W., & Barrett, K. C. (2007). *SPSS for introductory statistics: Use and interpretation* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Nikoopour, J., Farsani, M. A., & Nasiri, M. (2011). On the relationship between critical thinking and language learning strategies among Iranian EFL learners. *Life*, *18*(3), 195-200.

Nosratinia, M., Ghanbari Asiabar, & M., Sarabchian, E. (2014). Exploring the relationship between Iranian EFL learners' language learning strategies and critical thinking. *International Journal of Language Learning and Applied Linguistics World*, *5*(2), 335-345.

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. New York, NY: Newbury House.

Patton, M.Q. (2000).*Qualitative research and evaluation methods* (3rd Ed.). Thousand Oaks, CA: Sage.

Paul, R. W. (1993). The logic of creative and critical thinking. *American Behavioral Scientist*, *37*(1), 21-39.

Paul, R., & Elder, L. (2008). *The miniature guide to critical thinking concepts and tools*. Tomales, CA: Foundation for Critical Thinking.

Pithers, R. T., & Soden, R. (2000). Critical thinking in education: A review. *Educational Research*, *42*(3), 237-249.

Rabi'ee, B. (2010). The effect of practicing analysis and synthesis on EFL learners' critical thinking and reading comprehension skill. (Unpublished master's thesis). Sabzevar Tarbiat Moallem University,Iran.

Rojewski, J. W. (2002). Preparing the workforce of tomorrow: A conceptual framework for career and technical education. *Journal of Vocational Education Research*, *27*(1), 7-35.

Rudd, R. D. (2007). Defining Critical Thinking. *Techniques*, *82*(7), 46-49.

Scott, S. (2008). Perceptions of students' learning critical thinking through debate in a technology classroom: A case study. *The Journal of Technology Studies*, *34*(1), 39-44.

Tabačková, Z. (2015). Outside the classroom thinking inside the classroom walls: Enhancing students' critical thinking through reading literary texts. *Procedia - Social and Behavioral Sciences*, *186*, 726-731. doi:10.1016/j.sbspro.2015.04.042

Tabatabaei, O., & Parsafar, M. (2012). The effect of self-directed learning on critical thinking of Iranian EFL learners. *Journal of Educational and Social Research, 2*(2), 55-64.

Tarvin, W., & Al-Arishi, A. (1991). Rethinking communicative language teaching: Reflection and the EFL classroom. *TESOL Quarterly, 25*(1), 9-27.

Timpson, W., & Doe, S. (2008). *Concepts and choices for teaching: Meeting the challenges in higher education* (2nd ed.). Madison, WI: Atwood Publishing.

Tuzlukova, V., & Al-Busaidi, S. (2020). Critical thinking in the language classroom: Teacher beliefs and methods. *Pertanika Journal of Social Sciences and Humanities*, *25*, 615-633.

Zare, M., & Biria, R. (2018). Contributory role of critical thinking in enhancing reading comprehension ability of Iranian ESP students. *IJREE*, 3 (3), 111-123.