THE RELATIONSHIP BETWEEN IRANIAN EFL LEARNERS’ SELF-EFFICACY AND CRITICAL THINKING

1Vahid Ahmadzadeh Barforoush, 2Ali Salimi Khorshidi
1Department of English Language, Sari Branch, Islamic Azad University, Sari, Iran
2Department of English Language, Neka Branch, Islamic Azad University, Neka, Iran

Corresponding:
vahidtido@yahoo.com & mjzaret@gmail.com

Article reference:

Abstract: The primary purpose of this study was to investigate the relationship between the self-efficacy and critical thinking of Iranian EFL learners. The secondary purpose of this study was to find out whether the two age groups, 15-18 and 19-22, differed in critical thinking. Three different instruments were used in this study: language proficiency test, self-efficacy questionnaire and critical thinking questionnaire. The study was conducted in two phases. In the first phase, eighty-five students learning English in Iran Mehr Language Institute were invited to take part in the study. Afterwards, sixty of them were chosen as the homogenized members and were given the self-efficacy questionnaire. And then a 30-item critical thinking questionnaire was given to the students. To fulfill the objectives of the study, some statistical techniques such as Pearson Product Moment Correlation and an independent samples t-test were conducted. Based on the results, there was a strong, positive correlation between students’ critical thinking and their self-efficacy, which was statistically significant ($r = .991, p = .000$). Therefore, the first null hypothesis was rejected in the first phase of the study. The results of the analyses related to the scores obtained from comprehension, analysis, and evaluation of the participants revealed that there was no statistically significant difference between the mean scores of the two age groups on critical thinking ($t (58) = 1.65, p = .104 > 0.05$). Therefore, the second null hypothesis “there is no difference between the critical thinking of 15-18-year-old learners and 19-22-year-old learners” was accepted.

Index Terms: Critical thinking, Language achievement, Language proficiency, Self-efficacy.

1. Introduction

Bandura (1994) defines self-efficacy as peoples’ beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Also, he defines teacher’s self-efficacy as the degree to which teachers believe they have the ability to affect students’ performance. Thus, what are clearly emphasized in Bandura’s social cognitive theory are peoples’ perceptions of their capabilities rather than real/actualized capabilities since beliefs and perceptions greatly influence how one’s potential is realized and utilized.

The ability to think is one of the distinguishing features of human beings. We think because we are human. But how do we think? One of the main features that distinguishes us from other members of our own species is the value of our thinking. Critical thinking is the cause of our species' development and progress. Not every natural thinking process leads to excellence. Hence, Scriven and Paul (2004) suggest its cultivation to prevent it from becoming biased, distorted, partial, uninformed, and prejudiced. That is the reason for recent enthusiasm for the development of critical thinking in education. The field of foreign language education is not an exception. Researchers and teachers in this field are now concerned with
identifying the effect of different learner characteristics such as critical thinking and self-efficacy on learning a foreign/second language.

Focusing on individual differences in the realm of language teaching and learning is not a new phenomenon. In recent years, there has been a gradual shift from teacher-centered education to learner-centered one. This led researchers to focus on learners and learning processes rather than teaching processes. Thus, a concern arose with regard to how learners engage in their learning tasks in a second or a foreign language. By this shift, a further concern for the differences among learners came to the attention of EFL researchers (Yarahmadi, 2011).

Critical thinking ability is one of the traits that lead to individual differences in student learning. Critical thinking helps individuals to think and analyze critically about their own learning, and to strive and develop expertise in their areas of professionalism (Phan, 2010). A substantial theoretical and empirical base now exists in the literature to demonstrate the association of CT with students' academic success (Lee & Loughran, 2000). Evidence from previous studies indicates that critical thinking affects students’ learning and performance outcome. Phan (2010) indicated that engaging in critical thinking helps improve students’ academic performance. Ennis (1985) defines critical thinking as reasonable and reflective thinking that is focused on deciding what to believe or do.

Critical thinking as one of the factors that affect learning is a cognitive skill which exists and influences the way of our thinking. According to Ennis (2011) critical thinking is the ability to think clearly and rationally. It includes the ability to engage in reflective and independent thinking; the ability to decide what to do or what to believe. Halpern (1999) defines critical thinking as the use of cognitive skills or strategies that increase the probability of a desirable outcome. He argues that critical thinking is purposeful, reasoned, and goal-directed. It is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions.

Moon (2008) asserts that critical thinking has a significant role in higher education and the professions. It can be considered as a core of higher education and as a fundamental goal of learning. She believes that if critical thinking is clearly expressed in higher education, then students who are achieving those levels of qualification will be critical thinkers.

Concerning the importance of critical thinking in education, Gelder (2005) and Willingham (2007) agree that a primary goal of education is to enable the students to think critically. Akyuz and Samsa (2009) also state that to teach students critical thinking skills is the aim of higher education. They believe that one of the greatest experiences for students in higher education is to think critically and to challenge other students’ ideas with those of their own. Thinking skills are crucial for educated persons and by these skills they can cope with a rapidly changing world and deal with reality in a reasonable and independent manner.

According to Richards and Schmidt (2010), “Self-efficacy” is persons’ belief in their own capabilities and their ability to attain specific goals. A learner’s sense of efficacy affects their motivation to learn, the goals they set, the effort they devote to attaining these goals and their willingness to persist in the face of difficulty. Self-efficacy has been found to influence learners’ achievement in language learning. And “Critical thinking” is a level of reading comprehension or discussion skills when the learner is able to question and evaluate what is read or heard. In language teaching this is said to engage students more actively with materials in the target language, encourage a deeper processing of it, and show respect for students as independent thinkers.

Efficacy is essentially individuals’ future-oriented judgment about their competence rather than their actual level of competence. This is an important feature because people regularly overestimate or underestimate their actual capabilities, and these estimations may have consequences for the courses of action they choose to follow and the effort they exert in those pursuits (Woolfolk Hoy & Burke Spero, 2000). For example, Bouffard-Bouchard, Parent, and Larivee (1991, cited in Woolfolk et al., 2000) found that children possessing higher levels of efficacy beliefs performed better in solving math problems than those who had lower levels of efficacy beliefs in spite of the fact that both groups had the same levels of skill development in mathematics. Bandura (1982) argued that those students with a higher degree of self-efficacy tend to exert more effort, persevere in difficult situations, choose a course of activities more attentively, and retain more realistic and
flexible attributions. While students with low self-efficacy display less persistence and effort expenditure, avoid uncertain and challenging tasks, lack intentionality, and possess attributions that are nonrealistic and maladaptive.

As far as the researcher knows, the relationship between critical thinking ability and self-efficacy has been rarely investigated in an Iranian EFL context. Accordingly, the purpose of the present study was to empirically investigate the relationship between self-efficacy and critical thinking ability of Iranian EFL learners and also to determine whether there is any statistically significant difference between the critical thinking of 15-18-year-old learners and 19-22-year-old learners.

Since many researchers and scholars emphasize on the importance of critical thinking and self-efficacy as one of the main aims of education and as an aspect that affects language learning, it is important to pay attention to the learners’ way of thinking and attempt to enhance critical thinking ability of language learners in our country and also how to increase self-efficacy in the students who have low self-efficacy.

So the present study can be an aid for educational decision makers to know to what extent Iranian EFL learners have critical mind and if it is related to their language learning. It helps syllabus designers and material developers to create course books that consider critical thinking as one of the effective elements for academic success. It can also notify teachers of the importance of increasing students’ critical thinking ability and teaching them how to use this ability to be successful in different processes of learning. In this regard, Halpern (1999) indicates that “there are identifiable critical thinking skills that can be taught and learned, and when students learn these skills and apply them appropriately, they become better thinkers”. He also believes that college students should receive explicit instruction in how to think.

The finding of this study may have advantages and benefits both for teachers and the students involved in teaching/learning process.

2. Review of the Related Literature

2.1. Self-efficacy

Self-efficacy is explained in the theoretical framework of social cognitive theory by Bandura (1986, 1997) which stated that human achievement depended on interactions between one’s behaviors, personal factors and environmental conditions. The behavior of individual depended largely on early experiences at home. The home environment that stimulated curiosity will help build self-efficacy just as displaying more of that curiosity, and exploring activities would invite active and positive reciprocity. This stimulation enhanced the cognitive and affective structures of the individual which include his ability to sympathize, learn from others, plan alternative strategies and regulated his own behavior and engaged in self-reflection (self-efficacy).

A useful framework for thinking about students’ beliefs about themselves as learners can be found in the literature on general educational psychology. Paris and Winograd (1990) refer to ‘metacognitive beliefs’—beliefs about thinking and learning. They classified these beliefs into four kinds, and two of them defined here. The first of these is agency—learners’ beliefs about their own abilities and competences. An important aspect of this is ‘self-efficacy’, or the belief in one’s ability to accomplish a task. Self-efficacy beliefs guided people’s choices, efforts and degree of persistence with tasks. High levels of self-efficacy appeared to be particularly important in maintaining motivation in the face of difficulties and failure (Bandura, 1995). Studies that have investigated self-efficacy in language learning have also found that learners with high levels of self-efficacy seem to have better control over and knowledge of effective learner strategies (Victori, 1999; Yang, 1999).

Learning a foreign language is a complex task which its effectiveness may associate with different factors such as teachers’ own language proficiency, self-efficacy, and experience (Khatib, Sarem, & Hamidi, 2012). Self-efficacy beliefs are conceived as the most central and pervasive mechanism of human agency in social cognitive theory. In relation to this, Bandura (2006) states that among the mechanisms of human agency, none is more central or pervasive than belief of personal efficacy. This core belief is the foundation of human agency. Unless people believe they can produce desired effects
by their actions, they have little incentive to act, or to persevere in the face of difficulties. Whatever other factors serve as guides and motivators, they are rooted in the core belief that one has the power to effect changes by one's actions.

Perceived self-efficacy has been defined by Bandura (1997, cited in Hamidi & Montazeri, 2014) as beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments. Bandura (1997) distinguished self-efficacy from other constructs such as self-concept and self-esteem. First, he stated that self-concept refers to “a composite view of oneself that is presumed to be formed through direct experience and evaluations adopted from significant others”, thus it is mostly concerned with global self-images. Unlike self-concept, self-efficacy beliefs varied according to the domain of activities, the levels of difficulty, and the specific context. For example, one who had low efficacy beliefs in swimming may have high efficacy beliefs in soccer, while the global nature of self-concept construct may not do for this domain specificity.

Self-efficacy beliefs are also different from the construct of self-esteem, which refers to “whether one likes or dislikes oneself” (Bandura, 1997). Bandura (1997) stated that self-efficacy beliefs are concerned with judgment of personal capability while self-esteem is concerned with judgment of self-worth. Therefore, one’s judgment of his own capacity to perform a certain activity as quite low did not necessarily entail a loss of self-esteem. For example, one’s judgment about his capability to swim is least likely to impact his self-esteem as an English teacher, unless he invested his self-worth in that activity. Also, self-efficacy beliefs predicted “the goals people set for themselves and their performance attainments, whereas self-esteem affected neither personal goals nor performance”. In summation, in Bandura’s conception, self-efficacy is specific to a domain, the level of difficulty within the same domain, and the context. These aspects made self-efficacy beliefs different from other global constructs of self-concept and self-esteem.

The importance of self-efficacy beliefs in human functioning is summarized in Bandura’s (1997) statement that people’s level of motivation, affective states, and actions are more based on what they believe than what is objectively true. As Pajares (2002) aptly pointed out, “how people behave can often be better predicted by the beliefs they hold about their capabilities than by what they are actually capable of accomplishing, for these self-efficacy perceptions help determine what individuals do with the knowledge and skills they have”. While a mismatch between belief and reality is very common, belief often guides when one engages in a course of action (Pajares, 2002). Therefore people’s attainments are generally better predicted by their self-efficacy beliefs than by their previous attainments, knowledge or skills.

In terms of how self-efficacy beliefs influenced human functioning, Bandura (2006) contended that they influence “people’s goals and aspirations, how well they motivate themselves and their perseverance in the face of difficulties and adversity”. Also, self-efficacy beliefs “shape people’s outcome expectations” and determine how opportunities and impediments are viewed”. For example, a person of high efficacy might be more resilient in the face of adverse situations while a person of low efficacy might easily give up trying.

2.2. Critical thinking

A commonly perceived definition is needed for critical thinking. Many definitions of critical thinking have been proposed up to now. When examined closely, however, they all point to some common principles and criteria. For instance, Paul, Elder and Bartell’s (1997, cited in Fahim & Haghghi, 2014) considered critical thinking as "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action."

In Feriere’s (1973) word language is a thinking process that allows students to learn and grow. Critical thinking, a rapidly growing concept in education has stimulated a flood of recent research and publications. Nowadays, critical thinking is one of the major concepts under consideration in education. Cotton (1988, cited in Fahim & Haghghi, 2014) described creative thinking as a novel way of seen or doing things. It has been mostly used for first language education in the United States, but today, its role in second and foreign language learning and teaching is of great importance. critical think-
ing and its relationship to the educational process has become a central issue and it is time to explore the term. She adds since critical thinking is a process which is involved in any research activity; it can be considered as a principal concept to education, especially at higher levels. In fact, it is a fundamental goal of learning.

In a comprehensive attempt to define critical thinking, Pascarella and Terezini (1991, cited in Fahim & Haghighi, 2014) suggested the following: “... critical thinking has been defined and measured in a number of ways but typically involves the individual’s ability to do some or all of the following: identify central issues and assumptions in an argument, recognize important relationships, make correct inferences from data, deduce conclusions from information or data provided, interpret whether conclusions are warranted on the basis of the data given, and evaluate evidence or authority.”. Burden and Byrd (1994, cited in Fahim & Haghighi, 2014) categorized critical thinking as a higher order thinking activity that requires a set of cognitive skills. Halpern (1996) defined critical thinking as the use of cognitive skills or strategies that increase the probability of a desirable outcome.

Other definitions include: the formation of logical inferences, developing careful and logical reasoning, deciding what action to take or what to believe through reasonable reflective thinking, and purposeful determination of whether to accept, reject or suspend judgment Fahim and Teimurtash (2012, cited in Fahim & Haghighi, 2014). Many writers such as Atkinson (1997) and Fox (1994) argued that CT is embedded in western culture and is incompatible for Asian learners. Other scholars such as Paton (2011) have rejected this idea and speak for the universality of CT. Critical thinking is but one kind of good thinking. It has been equaled by some scholars such as Crombie (1994) to scientific thinking.

Despite debate over the definition of critical thinking, it has been acknowledged as a desirable trait that must be embedded in the education system. There is consensus among scholars that education must not only provide learners with the "what" of knowledge, but also with the "how". Pennycook (1994) pointed to the shift which has occurred in the conceptualization of learning as an ever-evolving process of discovering, questioning, and reformulating hypotheses rather than rote learning. As a result, teaching critical thinking skills have gained attention in educational research. For instance, Glaser’s (1941, cited in Fahim & Nasrollahi, 2013) seminal work reported that training programs could have beneficial effect on different aspect of CT variable.

### 2.3. Related studies

There have been several studies considering learners’ self-efficacy and critical thinking, some of which are as follows:

Schunk (1995) stated that students when engaged in activities are affected by personal (e.g., goal setting, information processing) and situational influences (rewards, feedbacks). These provided students an idea on how well they learn. Self-efficacy was improved when students perceived they performed well. On the other hand, according to Bandura, Barbaranelli, Caprara, and Pastorelli (1996), parents’ academic aspirations for their children, influence the children’s academic achievement directly or indirectly by influencing their self-efficacy. As stated by the theoretical description on self-efficacy and findings of past studies, it is therefore the aim of the study to find out the relationship between students’ self-efficacy and their English language achievement. They selected 1,146 students from eight secondary schools. The instruments used to measure self-efficacy were the Self Efficacy Scale developed by Bandura (1995) and the Self Efficacy Scale developed by Kim and Park (1997). The results showed that 51 percent of students had high self-efficacy while 48 percent showed low self-efficacy. In conclusion, achievement in English language will improve when students have high self-efficacy in the language.

Huang and Chang (1996) conducted a study on the relationship between reading and writing self-efficacy and achievement with four ESL students from highest-level reading and writing classes. After the interviews, class observations, examination of writing assignments and two questionnaires, it was seen that students’ self-efficacy is higher than their learning achievements and the participants’ interest and the teacher’s support influence their self-efficacy.

According to Christine M. Overly (2001) to determine if a relationship existed between critical thinking skills and self-efficacy in Associate Degree nursing students. A convenience sample of 30 nursing students in their second year of an
Associate Degree RN program was used. The framework for this study utilized Bandura’s social cognitive theory and Benner’s nursing theory of skill acquisition and development. Critical thinking skills were measured by the California Critical Thinking Skills Test. Self-efficacy was measured by the Generalized Perceived Self-Efficacy Scale. Demographic data of age, gender, and marital status, number of dependents, employment status, and income were obtained to determine if there were any relationships or differences related to critical thinking or self-efficacy. A positive correlation was found between critical thinking skills and perceived self-efficacy (r = .40, p = .03). A replication of this study with a larger sample would be recommended. A longitudinal study might indicate changes that occur as the student progresses in the learning process with regard to critical thinking skills and self-efficacy.

In addition, Ho (2005) conducted a study to investigate the relationships between self-efficacy, collective efficacy, and English and mathematics performance of middle school students’ in Taiwan. The result driven from the study showed that self-efficacy was considered as an important factor for performance of English and mathematics. The students that had high self-efficacy got good grades and were more confident in their abilities.

Mills et al. (2007) have conducted a study focusing on specific skills in language learning. In this research, they investigated the relationship between self-efficacy, efficacy, anxiety, and gender on the listening and reading proficiency of 95 college students enrolled in a French course in United States. The results showed that there is a significant relationship between reading self-efficacy and reading proficiency for all students and there is a relationship between listening self-efficacy and listening proficiency only for female students. The findings’ of this study indicated that self-efficacy for self-regulation is a strong predictor of the achievement and female students’ revealed greater self-efficacy for self-regulation.

In another study, Li and Wang (2010) explained the relationships between reading self-efficacy and the use of reading strategies in an EFL context. The participants involved second year of English students in China University replied two questionnaires. The findings showed that reading self-efficacy was in a positive and significant way related to the use of reading strategies. Accordingly, individuals with high self-efficacy in reading applied more reading strategies compared to those with low self-efficacy.

According to Dehghani et al. (2011), critical thinking and motivational factors affecting it, such as self-efficacy have been heavily regarded by higher education systems. This descriptive-correlation study aimed to investigate the relationship between students’ self-efficacy and critical thinking in Ferdowsi University of Mashhad, Iran. A random sample of 216 students completed Sherer et al.’s (1982) General Self-efficacy Scale and the California Critical Thinking Skills Test- Form B (1994). Finding showed a significantly positive relationship between students’ self-efficacy and critical thinking (r= 0.21, p< 0.001). Hence, self-efficacy as motivational factor should be considered for developing learners’ critical thinking skills.

Shaabani et al. (2011) stated that the purpose of the present study was to examine the relationship between academic self-efficacy and creativity with critical thinking in undergraduate students of Shahid Chamran University of Ahvaz. The statistical population of this study consisted of all the undergraduate students of Shahid Chamran University of Ahvaz within the academic years of 2011-2012. The sample of this study included 240 students (115 male, 125 female) who were selected using a multi-stage random method. Data were collected using the Abedi’s creativity questionnaire, the academic self-efficacy questionnaire, and the B form of California Critical Thinking Skills Test. The results of the simple correlation showed that the creativity and its components i.e., flexibility, fluency and elaboration (except for originality) as well as academic self-efficacy had a positive and significant relationship with critical thinking. The results of regression analysis also showed that such variables as flexibility, fluency, elaboration and academic self-efficacy played a major role in predicting critical thinking.

In another study, Fahim and Nasrollahi (2013) stated that the improvement of critical thinking and motivational factors such as self-efficacy seem to have great effects on students’ academic achievements. The way in which learners identified their language learning abilities and their ability to control thinking might have a significant impact on their learning outcomes. This study aimed to investigate the relationship between Iranian students’ self-efficacy and their critical thinking.
ability. To this end, 50 university students majoring in English teaching in Islamic Azad university of Amol and Ghaemshahr branch had been randomly selected to fill out the two questionnaires on Self-efficacy and Critical thinking skills. The finding of the study showed a strong relationship between Iranian students’ critical thinking ability and self-efficacy. In other words, the higher the students' self-efficacy, the higher their critical thinking ability. Generally, the finding provided empirical support that self-efficacy should be considered for developing learners' critical thinking skills.

Azadi et al. (2014) conducted that this study was to evaluate the effectiveness of teaching critical thinking skills on increasing the self-efficacy of nursing and midwifery students in Gachsaran Azad University. In this study, the experimental method of pre-test-post-test type with a control group was used. For this purpose, using a single-stage cluster sampling method, 47 people were selected from nursing and midwifery students. Then, they were randomly assigned to experimental and control groups. The experimental group participated in 7 sessions of teaching critical thinking skills; every session lasted 2 hours. In post-training period, again both groups responded to self-efficacy questionnaires. Data analysis using two-way covariance analysis showed that average self-efficacy and its elements in the experimental group were significantly higher than the control group.

2.4. Research questions

In order to investigate the relationship between critical thinking ability and self-efficacy of the Iranian EFL learners, the following research questions were raised:
1. Is there any statistically significant relationship between Iranian EFL learners’ self-Efficacy and critical thinking?
2. Is there any statistically significant difference between the critical thinking of 15-18-year-old learners and 19-22-year-old learners?

3. Methodology

3.1 Participants

In order to find out the relationship between self-efficacy and critical thinking among Iranian EFL students, a sample of 85 students contributed to this study. For the purpose of this study, 4 intermediate classes from the language institute was chosen. The samples were going to be taken from these 4 different classes, male, and their ages ranged from 15 to 22 years old, after the OPT test was given. And it would not influence their grades in the courses.

3.2. Instruments

The instruments which were going to be used for this research are OPT proficiency test and learners’ self-efficacy questionnaire and critical thinking questionnaire. The OPT test was used in order to have two homogenized groups. The learners’ self-efficacy questionnaire were given to the students and also critical thinking questionnaire were given to the students.

3.2.1. OPT Proficiency Test

A test of language proficiency gave to the learners to determine their level of language proficiency in order to have homogenized participants. It consisted of cloze test, structure and vocabulary. All parts were in the form of multiple choice questions. It included 60 items and the time allotted was 30 minutes. It was given to 85 students studying at Iran Mehr Institute in Babol, Iran. Therefore, students with highest and lowest score would be omitted. But the students whose marks were at the same level would be chosen. Finally 60 students became homogenized.

3.2.2. Learners’ Self-efficacy Questionnaire

As the overall aims of any academic course often require that students complete their degree with a high level of confidence in a range of academic abilities and transferable skills, an important aspect of the Teaching for Learning Network is assessment of the self-efficacy beliefs of students.

Schwarzer and Jerusalem (1995), Translated by Mary Wegner was utilized to measure the self-efficacy of students. It
included 10 items with corresponding 4-point scale response options, ranging from not at all true (1 point), barely true (2 points), moderately true (3 points) to exactly true (4 points). Each question has 1-4 score range. The higher scores for these questions (40 as the highest score) and the lower scores (17 as the least score) represented the stronger and the weaker self-efficacy, respectively. It required 4 minutes on average and their scores were from 10 to 40. This questionnaire has been adapted from a survey by general self-efficacy scale. Each item expressed certain behavior followed by 4 numbers from which the participants choose the one which best represented their attitude towards the corresponding statement.

3.2.3. Critical Thinking Questionnaire

The Critical Thinking Questionnaire intends to explore what a person might or might not do when thinking critically about a subject. Developed by Honey (2000), the questionnaire aims at evaluating the three main skills of comprehension, analysis, and evaluation of the participants. The translated version of the test by Naeini (2005) will be used in order to make sure of the participants’ full comprehension. The reliability of the questionnaire was estimated to be 0.79.

It is a Likert-type questionnaire with 30 items that allows researchers to investigate the learners’ ability in note-taking, summarizing, questioning, paraphrasing, researching, inferencing, discussing, classifying, outlining, comparing and contrasting, distinguishing, synthesizing, inductive and deductive reasoning. The participants were asked to rate the frequency of each category they use on a 5-point Likert-scale, ranging from never (1 point), seldom (2 points), sometimes (3 points), often (4 points), to always (5 points). Therefore, the participants’ scores will range within 30 to 150.

3.3. Procedure

First, the researcher selected 85 learners from the language institute. Then he gave OPT proficiency test to the students in order to homogenize the students. Out of 85 EFL learners of Iran Mehr Institute, 60 learners were chosen from this test. Then these sixty students (homogenized students) answered the questionnaire of self-efficacy. After some sessions, the researcher gave the students a critical thinking questionnaire.

4. Results and Data Analysis

The data collected from the intended students were gathered and analyzed by SPSS version 18, related descriptive and inferential statistics were calculated. The Pearson Product Moment Correlation and also an independent samples t-test were used to find the relationship among variables in this study. The first one was run to answer the first research question and the second one was conducted to answer the second research question.

4.1. Result of the OPT used as homogeneity test

Table 4.1 The Descriptive Statistics of the OPT Scores

<table>
<thead>
<tr>
<th>Statistics</th>
<th>OPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Valid 85</td>
</tr>
<tr>
<td></td>
<td>Missing 0</td>
</tr>
<tr>
<td>Mean</td>
<td>30.7529</td>
</tr>
<tr>
<td>Median</td>
<td>31.0000</td>
</tr>
<tr>
<td>Mode</td>
<td>30.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>5.25517</td>
</tr>
<tr>
<td>Variance</td>
<td>27.617</td>
</tr>
<tr>
<td>Minimum</td>
<td>17.00</td>
</tr>
<tr>
<td>Maximum</td>
<td>42.00</td>
</tr>
<tr>
<td>Sum</td>
<td>2614.00</td>
</tr>
</tbody>
</table>

Table 4.1 above shows that out of eighty-five participants, sixty were considered as homogenous members based on one standard deviation above and below the mean (+/- SD).
4.2. Analysis of the first research question

The first research question was as follows:
Is there any statistically significant relationship between Iranian EFL learners’ self-Efficacy and critical thinking?

The following tables show the result.

4.2 Test of Normality for the Critical thinking and self-efficacy

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Critical</td>
<td>.085</td>
<td>60</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.092</td>
<td>60</td>
</tr>
<tr>
<td>a. Lilliefors Significance Correction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* This is a lower bound of the true significance.</td>
<td></td>
</tr>
</tbody>
</table>

As it can be seen in table 4.2 above, the Sig value of the Shapiro-Wilk Test is higher than 0.05 for both groups, meaning that the two sets of scores are normally distributed. Therefore, the best test for mean comparison would be the Pearson correlation test.

Table 4.3 Result of the Pearson Correlation

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Self-efficacy</th>
<th>Critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>60</td>
</tr>
<tr>
<td>Critical</td>
<td>Pearson Correlation</td>
<td>.711**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>60</td>
</tr>
</tbody>
</table>

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

The Pearson Product Moment correlation was run to determine the relationship between critical thinking and self-efficacy. There was a strong, positive correlation between students’ critical thinking and self-efficacy, which was statistically significant ($r (.711) = .991$, $p = .000$). Thus, it could be concluded that the null-hypothesis which was “There is no relationship between Iranian EFL learners’ self-Efficacy and critical thinking” was rejected.

4.3. Analysis of the second research question

The first research question was as follows:
Is there any statistically significant difference between the critical thinking of 15-18-year-old learners and 19-22-year-old learners?

The following tables show the result.
Table 4.4 Test of Normality for Two Age Groups of Critical thinking

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>G12</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G12</td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Critical 15-18</td>
<td>.094</td>
<td>.200</td>
<td>.980</td>
</tr>
<tr>
<td>Critical 19-22</td>
<td>.145</td>
<td>.109</td>
<td>.952</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

As it can be seen in table 4.4 above, the Sig value of the Shapiro-Wilk Test is higher than 0.05 for both groups, meaning that the two sets of scores are normally distributed. Therefore, the best test for mean comparison would be the independent samples t-test.

Table 4.5 Descriptive Statistics for the Two Age Groups

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical 15-18</td>
<td>30</td>
<td>112.9333</td>
<td>21.68415</td>
</tr>
<tr>
<td>Critical 19-22</td>
<td>30</td>
<td>120.7000</td>
<td>13.86673</td>
</tr>
</tbody>
</table>

As it can be seen in table 4.5 above, the mean of the first and the second age groups are 112.93 and 120.70 respectively.

Table 4.6 Result of the Independent T-test

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Critical, Equal variances assumed</td>
<td>5.708</td>
</tr>
<tr>
<td>Critical, Equal variances not assumed</td>
<td>1.653</td>
</tr>
</tbody>
</table>

The independent samples t-test was run to compare the mean scores of the two age groups on critical thinking. As table 4.7 above shows, it can be concluded that there was no statistically significant difference between the mean scores of the two age groups on critical thinking ($t (58) = 1.65, p = .104 > 0.05$). Therefore, the second null hypothesis “there is no statistically significant difference between the critical thinking of 15-18-year-old learners and 19-22-year-old learners” is confirmed.

5. Conclusion

This study aimed to investigate the relationship between students’ self-efficacy and critical thinking in Iran Mehr Institute. The result of Pearson’s correlation coefficient showed significantly positive relation between students’ self-efficacy and critical thinking ($r (.711) = .991, p = .000$). This finding is agreement with Phan’s (2009) study. In explaining the find-
ing, it can be discussed that as Benight et al. (2004) noted, self-efficacy regulate human performances by cognitive and thoughtful processes, and according to Bandura (1997), self-efficacy causes achievement by practice and behavior organization. Therefore, high level cognitive processes, such as critical thinking, and motivational factors, such as self-efficacy result in students' achievements. Wang et al. (2008) found that students with high level self-efficacy more apply high level learning strategies. Moreover, we did not find any significant difference between the critical thinking of 15-18-year-old students and 19-22-year-old students ($t(58) = 1.65, p = .104<0.05$). This is also in agreement with Curtis et al.'s (2008) findings.

In summary, the lack of motivation is of obstacles to critical thinking development (Myers, 1992) and self-efficacy beliefs as main factors for motivation play a considerable role in the development of critical thinking skills (Artino et al., 2009). With regard to the importance of critical thinking in higher education system and the results of our study, it can be concluded that holding classes in an argumentative mode and involving students in group discussion and involvement, as well as lessening the memorization contents of curricula and increasing their challengeable and reflective contents are needed for the enhancement of critical thinking.

References


