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## Impact of Emotional Intelligence Enhancement on Test Anxiety among EFL Learners: an Experimental Study

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### ABSTRACT

Emotional Intelligence (EI also EQ) is an affective factor capable of being enhanced, (Test) Anxiety is another affective factor capable of being reduced. The present study is based on examination of possible impact(s) of enhancing Emotional Intelligence on the reduction of Test Anxiety among Iranian university students. For this purpose, 45 students in intervention and control conditions completed the "Emotional Intelligence Questionnaire" and filled Sarason Test Anxiety Scale; afterwards, they received instructions on EQ and strategies to enhance it. At the end of the course, the same Test Anxiety Questionnaire was administered to the participants. By the use of descriptive statistics and independent samples t-test the data were analyzed. The analysis of the data uncovered that there is a significant difference in the reduction of students' Test Anxiety in experimental group. The results can shed light on how students' emotional intelligence enhancement influences Test Anxiety and also possibly in a broader scale, testing outcomes.

**Keywords:** Test Anxiety, Emotional Intelligence Enhancement, EFL Learners

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### 1. Introduction

Success in exams could not rationally be attributed to a single factor only; there must be various factors at work, some of which already unknown to and unexplored by educators. Test Anxiety as one of these influential factors, is probably widespread in about 10 to 30 percent of learners

(Hogez, 1988). About 15% to 20% of university students and 10 million students at schools experience it in USA (Chapel et al, 2005). Thus, test anxiety is a significant educational problem affecting many of students in school (Salend, 2011). Therefore, it is worth exploration. Anxious students may "freeze" or "blank"

during a test but the degree of anxiety in different fields of study differs. A student of literature would not experience as much anxiety as a student pilot or a medical student, whose work is a matter of life and death of himself and/or several dozens of passengers! For example, Green et al. (2015) argued that about 22% of the US medical students had moderate-to-high Test Anxiety scores; Tektaş et al. (2013) also claimed a prevalence rate of 29% of Test Anxiety among medical students in Germany.

Researchers of the current study explored test anxiety because learning foreign/second language also creates anxiety. In foreign/second language learning there is always the question of “*whether I am on the right track or not*” (whether I understood the text thoroughly)? And more importantly during the exam sessions: “*whether I understood the question right*”? To add insult to injury, “*whether I am able to make myself understood in second language and readably answer the question to which I know the correct answer in my native tongue*?” These questions arise since learning is the second task after overcoming the problem of translating the text into the first language, an extra burden, probably unique to foreign and second language learners only (or those who are taught by a medium of instruction except for their mother tongue).

Numerous meta-analyses have made it obvious that self-reported test anxiety correlates negatively with test performance (Ackerman & Heggstad, 1997; Seipp, 1991). Some other researchers (Morris and Liebert, 1969; Wine, 1971; Sarason, 1972; Covington, 1984) also detected that low performance on exams is primarily related to worrisome (Spielberger and Vagg, 1995). Test-anxious individuals have impaired

performance according to cognitive models of anxiety and performance (Eysenck, 1992), because task-irrelevant thoughts like worries about the performance culminate in poorer performance.

Recent definitions of Test Anxiety—which is an affective factor—introduce it as having two key components: Emotionality and Worry (Cassady & Johnson, 2001; Spielberger & Vagg, 1995). Therefore, the researchers decided to investigate anxiety in relation to emotions and particularly emotional intelligence, as in principle, human beings have the ability to intentionally modify their emotional experience. That is, they can self-regulate their emotional states (Tice & Bratslavsky, 2000). Emotional Intelligence has turned to one of the most significant and recurrently mentioned concepts in recent years. The notion of Emotional Intelligence has generated a wide-ranging attention in lay and also scientific field. Delving into its influence on test anxiety may present us with reducing anxiety which probably culminates in better test performance, a precious fruit to education.

## 2. Review of Literature

### 2.1. Test Anxiety

For Spielberger (1995), anxiety is emotional state composed of feeling, tension, apprehension, and its influences on the nervous system. Test anxiety can be explained as physiological, cognitive, and emotional responses due to stress encountered during the exams (Spielberger, 1980; Hall Brown et al., 2005). Anxiety is also defined as “a complex state that includes cognitive, emotional, behavioral, and bodily reactions” (Sarason, 1984, p. 931). Sarason (1975) explained Test Anxiety as a sort of self preoccupation that is shown in underestimation and reduction of self-potentials that ends usually in negative cognition, lack of centralization,



unwelcome physiological response and impaired academic performance. It is then predictable to observe a negative relationship between test scores and anxiety scores (cited in Lashkaripour et al., 2007).

The “problem of anxiety” is to a significant extent, “a problem of intrusive thoughts that interfere with task focused thinking” (Sarason, 1984, p. 929). Spielberger (1983, as cited in MacIntyre, 1995) defined the “feeling of anxiety” as an instant, momentary emotional experience with abrupt cognitive influences that is asserted by feelings of tension and worry, and nervousness as a reaction to a particular state (here: learning contexts).

The feeling of anxiety encourages some to operate superior by promoting them to strive more, whereas disallows others' actions by disturbing mental processes necessary for performing well. Aronen et al (2004) proved high levels of anxiety influence on the decrease of working memory, distraction, and reasoning in students. Greater anxiety would be associated with poorer academic achievement (Luigi et al., 2007) and a negative correlation between test anxiety and students' performances (Onyeizugbo, 2010; Abulghasemi, 2009).

Liebert and Morris (1967) accentuate composing factors of test anxiety as cognitive factors (“lack of confidence ”or “worry”) and factors related to the activation of the autonomic nervous system (“emotionality”). The first one is negative cognitions about one’s own performance in an exam, and the second dimension is related to physiological responses concerning the evaluative situation.

## 2.2. Emotional Intelligence

In general, EQ is defined as ability in individuals to comprehend their own emotions, motivate the individuals around them, and of course successfully manage

their relations (Petrides and Furnham, 2000). It is a theoretical construct which characterizes “ability at perceiving, assimilating, understanding, and managing emotions” to better guide one’s mind and behaviour. (Salovey and Mayer, 1990) Goleman (1998) argues that it is being able to identify, assess, and control the emotions of oneself, of others, and of groups. Mayer and Salovey (1997) define it as a set of skills including four categories: ability to appraise and express emotions; to emotionally support thinking; to understand and analyze emotions; and to regulate emotions. Emotional intelligence is defined also as “the ability to understand and manage emotions” (Barchard & Hakstian, 2004). Other definitions categorize EQ as a kind of social intelligence, specific emotional and social competence or cognitive abilities used to process affective information (Boyatzis and Sala, 2004). Nowadays, it is viewed as a collection of attitudes related to the processing of emotional information (Bar-On & Parker, 2012).

Research proved that social and emotional skills are associated with success in many areas of life, such as academic performance, student learning, and effective teaching (Sutten & Weatley, 2003). Research in general indicates that EQ has a significant influence on learning a second or foreign language (e.g., Petrides & Furnham, 2000; Pishghadam, 2008).

Bar-On model -utilized in this study- expresses that emotional intelligence abilities may differ over time, change throughout life of people, and be improved by various training and development programs (Garner & Stough, 2002). Therefore, the researchers of the current study decided to give a course for enhancing EQ and observe the probable changes it can bring. EQ enhancement has

been done using various approaches; some utilized a mixture of didactic and skills-based training (Schutte & Malouff, 2002; Slaski & Carwright, 2003; Kotsou et al., 2011; Ruiz-Aranda et al., 2012) whereas others have utilized practices including self-reflection (Wing et al., 2006). Enhancement procedures have also varied regarding duration of training, from some hours to two years.

### *2.3. Does Emotional Intelligence Influence Test Anxiety?*

Although there has been a lot of research done on these two affective factors, no study (based on the survey by the authors of this study) has investigated these two to check whether they influence each other or not? Whether manipulating one of them causes changes in the other or not. Some studies have been done regarding the relationship between the two. The results of the study done by Jahangirpour (2012) on the "relationship between the university students' EQ and their anxiety in Gilan" showed that there is a negative correlation between their EQ and anxiety. The current study checks this probable impact as there were some signs of a relation. To fulfill the aim of the study, the following research question was investigated:

Does enhancing EQ reduce Test Anxiety in a significant manner?

## **3. METHOD**

### *3.1. Participants*

The participants were 45 students of Economics, studying in two different provinces of Iran. The ages in treatment group ranged from 18 to 22 years old and 9 of the participants were male students. Control group composed of 24 students, 17 of which were female; their ages ranged from 18 to 28.

### *3.2. Instruments*

The "Bar-On EI" test and "Sarason Test Anxiety Questionnaire" were given to the participants. "Sarason Test Anxiety Questionnaire" which is the most famous test anxiety survey according to Troyn (1980), is a questionnaire that investigates students' test anxiety-with true or false choices- was applied. Items were designed in a way that features of test anxiety like reaction, tension, intrusive thoughts and physical symptom could be studied. In the current investigation the reliability Cronbach's alpha was 0.81; Cronbach's alpha of the questionnaire reported by Sarason was 0.91.

A pencil and paper self-report scale is the Bar-On Emotional Quotient Inventory (EQ-i). In Bar-On model, emotional intelligence comprises five main dimensions including personal dimension, inter-personal dimension, adaptability, coping with stress and general mood, and 15 sub dimensions secondary to those dimensions (Brown, Bryant & Reilly, 2006). Five dimensions include: Intrapersonal EQ including emotional self-awareness, assertiveness, self-regard, self-actualization, and independence sub-factors. The next one is interpersonal EQ, comprising empathy, interpersonal relationship, and social responsibility components. The third is adaptability EQ, encompassing 3 sub-factors problem solving, reality testing, and flexibility. Then, there is stress management EQ, which is divided into stress tolerance and impulse control components. The last is general mood EQ, which is composed of happiness and optimism (Bar-On, 1997, pp. 43-45). Participant respond on a 5-point Likert type scale continuum from "Very seldom or not true of me" to "Very often or true of me." Research proves that the scales show internal consistency, validity and test-retest reliability (e.g. Dawda & Hart, 2000).



Regarding cross-cultural differences and for having more secure comprehension of the questionnaire, the translated Persian version was used.

Dehshiri (2003) asserted that Persian version of the test of 133-item self-report Emotional Intelligence scale for measuring EQ which was developed by Bar-On is reliable and also valid. The Persian version was administered in the current study; 0.82 was the total reliability of the questionnaire, estimated via Cronbach's alpha. "Sarason Test Anxiety questionnaire" was given both before and after instructions on EQ. In due course a demographic form composed of 3 questions on gender, age and participants major was given to each student.

### 3.3. Data Collection

The research was done in Iran in a period of 4 months (a semester) in 2014. Students received instruction about the research procedure and "Interchange Placement Test", was used for choosing a homogeneous population regarding proficiency; afterwards, 45 participants were selected from students with intermediate level of proficiency. Then, the "Sarason Test Anxiety questionnaire" and "Bar-On EQ tests" were distributed among them. Verbal consent was affirmed by students after informing them of the value of the study. Then, some of the students were randomly selected to be interviewed for checking the reliability of their responses to the questionnaires. In the next phase of the study, enhancing EQ started by familiarizing participants with their emotions, the role that these emotions can play in success and the method of controlling them. Ultimately, a post test of anxiety-through Sarason Questionnaire again by the same participants- was administered to check how much enhancing EQ can influence anxiety. Except for teaching EQ, approximately the same

process was concomitantly in progress for the control group. Control group was selected almost parallel to the experimental one regarding demographic information and also proficiency.

## 4. Data Analysis & Discussion

Descriptive statistics was used in the study. In order to know the influence of EQ enhancement on Test Anxiety independent samples t-test was run.

### 4.1 Results

For analyzing the relevant data, the Statistical Package for Social Sciences (SPSS), version 22 was utilized. Significance level was 0.05. Table 1 shows descriptive statistics obtained from the control and experimental groups in test anxiety in pre-test.

*Table 1: Descriptive Statistics for Control and Experimental Groups' Performance on Test Anxiety (Pre-test)*

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pretest (test anxiety)	control	24	11.83	3.31	.67
	experimental	21	12.38	3.58	.78

Table 2 shows the results of independent sample t-test for the performance of the experimental and control groups on the pre-test of test anxiety. At the start, there was no significant difference between groups in the scores of test anxiety ( $t = -.532$ ,  $p > .05$ ) (see Table 2.).

*Table 2. Independent Samples Test*

		Levene's Test for Equality of Variances						95% Confidence Interval of the Difference		
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pretest (Test Anxiety)	Equal variances assumed	.097	.757	-.532	43	.597	-.54	1.02	-2.62	1.52
	Equal variances not assumed			-.529	41.133	.599	-.54	1.03	-2.63	1.54

Descriptive statistics obtained from the control and experimental groups for EQ questionnaire at the beginning of the experiment is shown in Table 3.



Table 3 Descriptive Statistics of the Control and Experimental Groups' Scores in EQ Test

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pretest (EQ)	1.00	24	477.8889	45.41558	10.70456
	2.00	21	470.3810	50.15224	10.94412

The independent sample t-test for the performance of the experimental and control groups on the emotional intelligence in pre-test is shown in table 4. No significant difference was observed between these groups on the EQ scores ( $t = .487, p > .05$ ).

Table 4. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Interval of the Difference Lower	Confidence of the Difference Upper
Pretest (EQ)	Equal variances assumed	.758	.390	.487	37	.629	7.50794	15.42890	-23.75398	38.76986
	Equal variances not assumed			.490	36.871	.627	7.50794	15.30886	-23.51442	38.53030

Table 5 shows descriptive statistics obtained from the control and experimental groups in test anxiety in post-test.

Table 5: Descriptive statistics of the control and experimental groups in post test

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest (test anxiety)	control	24	11.41	3.30	.67
	experimental	21	8.61	2.15	.47

For the performance of the experimental and control groups on the test anxiety in post-test, the independent sample t-test is shown in table 6. Between these groups on test anxiety scores at post-test a significant difference was observed ( $t = 3.39, p < .05$ ).

Table 6. Independent Samples Test for Test Anxiety post test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Interval of the Difference Lower	Confidence of the Difference Upper
Posttest (Test Anxiety)	Equal variances assumed	5.03	.03	3.30	43	.002	2.79	.84	1.09	4.50
	Equal variances not assumed			3.39	39.92	.002	2.79	.82	1.13	4.46

To check the influence of the treatment (EQ training) test anxiety more precisely, the gain scores (the difference of scores at

pre-test and post-test) were calculated for the two groups and the related statistical analyses were conducted to them. Table 7 shows the descriptive statistics for the gain scores in the test anxiety.

Table 7 Descriptive statistics of the control and experimental groups' gain scores on the text anxiety

	Group	N	Mean	Std. Deviation	Std. Error Mean
Gain scores (test anxiety)	control	24	-.41	1.41	.28
	experimental	21	-3.76	2.86	.62

Table 7 shows the independent sample t-test for the gain scores of the experimental and control groups. As it could be seen, a significant difference exists between the two groups in the gain scores of test anxiety after instruction on EQ ( $t = 4.86, p < .05$ ).

Table 8. Independent Samples Test for the difference between pre and post test scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Interval of the Difference Lower	Confidence of the Difference Upper
Gain scores (test anxiety)	Equal variances assumed	5.87	.02	5.07	43	.00	3.34	.65	2.01	4.67
	Equal variances not assumed			4.86	28.30	.00	3.34	.68	1.93	4.75

## 4.2 Discussion

Plausible impact of EQ enhancement on test anxiety was the concern of the present research. In this part, a summary of outcomes is presented to address the research question. The research question was about the impact of EQ development on the reduction of test anxiety. The results obtained from the study yielded a significant difference in the students' test anxiety after enhancing EQ. The results of this study confirm the co-relational research conducted by Ebrahimi and Khoshsim (2014), considering the existence of a relationship between EQ and test anxiety. The results confirmed the findings of Ebrahimi and Khoshsim (2015), regarding the impacts of EQ enhancement on answering cloze tests. After a period of enhancing EQ, they found that the participants in the intervention conditions



answered cloze tests better than individuals in the control group in a significant way. Also, regarding the impact of enhancing EQ and the changes in education, the results are in line with Schutte and Malouff (2002). The results of the current study confirmed the parallel study of Slaski and Carwright (2003). They examined the impact of EQ in the stress process as a moderator. A sample of 60 managers was trained in EQ. Related to EQ, stress, health and management performance pre-test and post-tests were administered. It was revealed that training caused increased EQ and improved well being and health, but the same results were not observed for the matched control group. Groves, McEnrue, and Shen (2008) empirically tested whether it is likely to deliberately develop EQ. They used a sample of more than 100 business students in which participants in treatment group took part in a 11-week EQ enhancement course. The study revealed that EQ can be knowingly increased; significant EQ gains was observed in treatment group and also gains across each EQ dimension, while the control group did not show any significant change. Fletcher, et al. (2009) argued that a workshop of 7 months on EQ ended in higher scoring on EQ, significantly.

The results of the current study verified the results of Kirk, Schutte and Hine (2011). They made available emotional self-efficacy training to employees randomly assigned to the treatment group. Employees scored higher than employees in the control condition on EQ, emotional self-efficacy and workplace civility, after the training. The results are also in line with Saadi et al. (2012) who found that female adolescents who received EQ training showed more EQ and less aggression after the enhancement than female adolescents in a comparison group. The results also support the findings of a mental-health study, in which subjects

who participated in 24 EQ training classes over two years, gained higher EQ and experienced less depression and social stress in comparison with participants in a control group (Ruiz-Aranda et al., 2012). Furthermore the study confirms the study done by Kotsou et al. (2011) which showed an increases in self-reported beside observer-reported typical or trait EQ among members of treatment group as opposed to control group. A parallel avenue of research encountered with the same results (for e. g.: Taylor (2004), Akinsola and Olowojaiye (2008), Reuben, Sapienza, and Zingales (2009)).

Based on the findings of the present study, which confirm the findings of other analogous researches, it could be argued that enhancing EQ influences test anxiety in a positive way (i.e. test anxiety reduces). These results are rationally expected because emotions play a crucial role in exams as Ebrahimi and Khoshsiman argued that "one who can handle his emotions can show his capabilities and achievements in tests (and test-like situations) as they really are not influenced by stress or other inhibiting factors" (2014, p. 154). Finally, it is reasonable to argue that EQ is a significant predictor of test anxiety particularly for those tests which are more critical and consequently more stressful.

## 5. Conclusion

As an informed conjecture, researchers of the existing investigation presumed that EQ as an affective factor might have an impact on test anxiety. The outcome of the undertaken data analysis showed a significant impact of EQ enhancement on test anxiety and the conjecture proved correct. Practical implications of this paper include- speaking, consciousness and knowledge of EQ shall not be neglected in educational contexts which seem to have the ability to resolve some affective

educational problems that sequentially can change the future of learners and also in a broader scale the destiny of a society at large. At least a workshop for students on EQ -which showed to be constructive in the current investigation- should be included in curriculums.

It is worth mentioning that although the findings confirmed the idea of the usefulness of EQ enhancement in dealing with test anxiety, the generalizability of the results might be challenged due to the limitation that the participants majored in Economics, a major which does not usually create much stress; medical students or other similar learners may be more appropriate to be studied. Thus, replication is necessary. This attempt leaves the door open for further investigations on EQ enhancement in different fields of study and for doing different tasks. Despite the promise of probable solutions of including EQ enhancement in the syllabus designs, it cannot take any substantial effect without a preconditioned re-examination and a systematic reformation of the existing educational policies and curriculums.

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