The Relation between Learning Style and Exam Anxiety of Students in IELTS and TOEFL Preparation Courses (Tehran's Second Region)

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Abstract: The present study is aimed to examine the relation between learning style and exam anxiety in students of IELTS and TOEFL preparation courses in Tehran's second region. Research method was practical in terms of objective, and in terms of data collection method, it was correlational-descriptive. The statistical population consisted of 850 students from IELTS and TOEFL preparation courses in Tehran's second region, from whom 265 individuals were selected as a statistical sample, using a Morgan table and a cluster random sampling method. In order to collect data, two questionnaires were used: New eland and Lincoln University's Learning Style questionnaire (1998) and Sarason's Exam Anxiety Questionnaire (1984). Cronbach's alpha coefficient was used to calculate the reliability of the questionnaires; and it was greater than 0.7 for both questionnaires. In addition, in order to calculate validity, content validity was used. Hence, the questionnaires were approved by experts. Analysis of the data obtained from implementing the questionnaires was done through SPSS software in two sections: descriptive and inferential (Pearson Correlation Coefficient and Multifold Regression). Research findings showed that there is a significant relation between learning styles (auditory, motor, visual) and exam anxiety. In other words, all three learning styles are significant predictors of students’ exam anxiety. Furthermore, the results of Pearson Correlation for subsidiary hypotheses showed that there is a negative significant relation between learning styles (auditory, motor, visual) and exam anxiety.

Keywords: exam anxiety, learning style, students of IELTS and TOEFL preparation courses, visual leaning style

Introduction

Anxiety is a state which exists in all humans to different degrees; thus everybody experiences that in life at least once (File & Hyde, 2012). The existence of a little anxiety in the body is natural and necessary. However, if there is an unusual level of anxiety, there will be problems, leading to an inability to achieve good results while having needed information and skills (Richardson et al, 2011).

Exam anxiety, as an important, inclusive phenomenon in education, is closely related to apprehension. Moreover, exam anxiety occurs when students approach tests. It has special characteristics which distinguish it from apprehension. According to Sarason and Mandler (1952; according to Shoghi et al, 2014), exam state calls for two types of drives: 1) assignment-focused drives which lead to certain behaviors for doing homework; 2) learned-anxiety drives, leading to two types of behavior and response: 1) task-relevant responses, based on which individuals complete their assignments and tests, helping them to reduce their anxiety; 2) responses and behaviors unrelated to assignments which are characterized by emotions of insolvency, increased physical reaction, predicting and expecting punishment, low confidence, and implicit efforts in order to escape test situations.

Sarason (1984) refers to exam anxiety as a type of self-preoccupation, which is characterized by inferiority complex and doubts about abilities, leading to negative cognitive self-assessment, lack of confidence, unfavorable physiological reactions, and poor educational performance. Adolescents who feel that they have a proper cognition and image of themselves will experience lower exam anxiety; in addition, they can express wiser methods for solving problems. In line with this, Hofmann et al (2010), in their study called "Exam Anxiety in Students", found that high level anxiety has a negative effect on test results. When students have a high level of exam anxiety, they pay attention to both variables that are related to them and those that are related to the test. If the level of exam anxiety is low, students pay more attention to test variables; hence, we must try to teach students strategies for reducing their anxiety. In addition, Akbari et al (2011), in a study called "Effect of Teaching Problem-Solving Skills on Students' Exam Anxiety", found that curricula help reduce exam anxiety in an experiment group. Four months later, before the tests of the second term, exam anxiety in both groups was reevaluated. The results of the four-month investigation showed that the effectiveness of the educational method was reliable.
In addition, Cyber refers to exam anxiety as a special state of apprehension, which includes phenomenological responses and behaviors related to fear of failure; and individuals experience that in evaluation situations. Based on scholars' estimations, every year, approximately 10 million students experience exam anxiety in a pre-university level, and 15 percent of the USA's students experience exam anxiety. Exam anxiety for high school students of Iran is 17.2 percent. Experience of exam anxiety is seen more in girls than in boys (Yusefi et al, 2013). Some students in different stages before tests, at tests, and after tests, experience anxiety; and this makes many cognitive and intentional processes interfere with effective performance. Changes in blood pressure and heart rate, weakness, dizziness, upset stomach, sleep disorder, lack of peace, changes in appetite, and secretion of adrenaline are all signs of exam anxiety. Factors causing exam anxiety can be classified into three groups: personality factors (low self-esteem, external control resource, apprehension, self-efficacy, improper study skills, and learned insolvency), institutional factors (hard lessons and tests, teachers' high expectations, time limits, improper environments for exams, improper lighting, and presence of interrupting factors like noise), and family factors (parenting styles, parents' high expectations, punishment and blaming, lack of encouragement, and poor social-economic status) (Behe, 2009).

30 percent of students suffer from exam anxiety, which is seen more in girls than in boys. Hill believes that older respondents experience more anxiety. In Iran, it seems that fear of low marks and family blames, peer pressure and fear of inability to continue studies constantly bring students mental pressure (Edelman& Ficorelli, 2005).

Another group of theorists believe that exam anxiety is correlated with inappropriate study habits and attention deficits, situational anxiety, social fears; and in addition, high exam anxiety is correlated with more cognitive errors, more negative feelings, and low self-esteem (Fransson, 2011). The level of exam anxiety in individuals is different and shows their attitude toward their information and knowledge. Therefore, exam anxiety is a general expression which refers to a specific type of anxiety or social fear, which puts individuals in doubt about their abilities, leading to a reduction in their ability to confront exam and evaluation situations. Sarason and Mandler (1952; according to Shoghi et al, 2014) believed that exam anxiety is composed of two cognitive and physical components. Below are brief definitions of the components of exam anxiety:

Cognitive component: A feeling of inefficiency, insolvency, expecting punishment, lack of confidence and implicit efforts to escape test situations;
Physical component: It is referred to as emotional motivations and physiological reactions.

One of the methods for reducing exam anxiety is to teach learning and study styles. In line with this, Tarazi and Khademi (2013), in a study called "Effectiveness of Teaching Learning and Study Strategies for Improving Self-Image in Students with Exam Anxiety", found that the scores of self-image in the respondents of the experiment group, compared to those in the control group, increased significantly. Teaching learning and study strategies had a considerable effect on improving self-image in students with exam anxiety. Learning styles, using the mentioned method, are used for processing new information and strategies, which are used for effective learning. Studies showed that individuals are different in terms of choosing learning approaches. Furthermore, using a single strategy for their learning is not a proper action (Zoghi et al, 2010). In approving this finding, Park (2009), in a study conducted for American, Vietnamese, Korean and Hong Kong students, found that American, Korean, and Vietnamese students have a week preference for receiving visual lessons while Hong Kong students greatly prefer to receive visual lessons. Moreover, Park's study showed that there is not a significant statistical relation between the strong group and gender, in terms of learning style. Therefore, individuals preferably focus on a specific type of data, and understand the data through different styles. This way, individuals can use proper strategies in learning activities through learning about their learning style, navigating their cognitive system in an appropriate way (Cheng, 2014). Generally, we can classify learning styles into three groups: cognitive component, affective component, and physiological component. Brief definitions of the components of learning style are as follows:

Cognitive Learning Styles: These styles are defined based on the way individuals comprehend subjects, the way they keep information in mind, the way they think about subjects, and the way they solve problems.
Affective Learning Styles: These styles comprise the personal and emotional characteristics of learners, such as perseverance, working by themselves or with others, and accepting or rejecting external reinforcements.
Physiological Learning Styles: These styles have a biological aspect, comprising individuals' reactions to the physical environment which affects learning (Shoghi and Behzadifar, 2012). In line with this, Saheb Alzamani and Zirak (2011), in a study called "Study and Learning Strategies of Isfahan's Medical Sciences University's Students, and its Relation with the Level of Exam Anxiety", found that there is an inverse and significant relation between study and learning strategies with exam anxiety. In fact, using study and learning strategies can be used as one of the methods for reducing exam anxiety.

In today's world, having abundant information is not the right solution. What is important is using a great deal of information in all areas of life. In order to use this extensive level of information, it is necessary that learners achieve high levels of thinking and self-awareness, with sufficient experience in cognitive processes and problem-solving. This is of double importance in higher education. Today, the basic topic of education is the training of humans who can think in the right way and solve complicated problems through proper decisions. Generally, national education goals refer to the fact that effective communication and problem-solving and learning strategies are necessities in gaining success and reducing exam anxiety in a high level of education (Gyeong JA & Myung, 2008).
According to Riding, R. & Cheema (1991), cognitive styles are hereditary and unchangeable. Individuals, considering their cognitive assignments, either benefit from their styles or they get no benefits. However, they can produce strategies that will affect different learning situations, and they will become aware of their styles, their weaknesses, and their strengths. Learning and study style is a general plan composed of a set of actions that are designed and implemented for achieving a certain goal. According to education psychologists, using learning styles in studying school books helps students to learn better (Byler & Snoman, 1993; according to Shoghi and Behzadfar, 2012). Therefore, professors must pay attention to learning styles in their educational process. Making aware teachers and educational affairs officials helps to use proper styles when teaching; and paying attention to students' differences helps in learning. On the one hand, adjusting educational methods can make the process of learning and educational activities more and more efficient.

On the other hand, studies in the field of exam anxiety are important from different perspectives. Some psychologists believe that studying constructs such as exam anxiety are more important than talent and intelligence when predicting educational progress, because intelligence is a fixed and fairly unchangeable construct; however, exam anxiety and constructs similar to it can be changed using certain strategies. Furthermore, considering the importance of the issue of exam anxiety, it is necessary to identify and control factors affecting it. Thus, considering the great spread of exam anxiety and disturbances in achieving objectives, leading to various educational problems, wasting students and teachers' time, negative effects on self-esteem, motivation, success, efficiency, educational performance, and considering the importance of study and learning strategies as well as the effect of exam anxiety on students' performance, and students’ little awareness of learning strategies, not many studies have been conducted. Hence, in the present research, with the aim of filling research gaps, we are trying to respond to the question, "What relation is there between learning style and students' exam anxiety in IELTS and TOEFL courses in Tehran's second region?" in line with this, research hypotheses are as follows:

Main Hypothesis: There is a relation between learning style and students' exam anxiety in IELTS and TOEFL courses of Tehran's second region.

Subsidiary Hypotheses:

There is a relation between visual learning and students' exam anxiety in IELTS and TOEFL courses of Tehran's second region.

There is a relation between auditory learning style and students' exam anxiety in IELTS and TOEFL courses of Tehran's second region.

There is a relation between motor learning and students' exam anxiety in IELTS and TOEFL courses of Tehran's second region.

Conceptual model of the research is presented in the following figure:

![Conceptual Model](image)

Figure 1: Research conceptual model (Lincoln and New Zealand University's learning style (1998), Sarason's Exam Anxiety (1984))

Methodology

The method used in the present research was practical in terms of objective; and in terms of data collection method, it was correlational-descriptive. The statistical population consisted of 850 students from IELTS and TOEFL courses in Tehran's second region, from whom 265 individuals were selected as sample size, using a Morgan table and a cluster random sampling method. In order to collect data, two standard questionnaires were used: 1) Lincoln and New Zealand University's learning style questionnaire (1998), 2) Sarason's Exam Anxiety questionnaire (1984). In table 1, its indexes have been presented. To calculate validity, content validity was used. Hence, the questionnaires were approved by experts. Furthermore, in order to measure the reliability of the questionnaires, Cronbach's alpha coefficient was used; and it was greater than 0.7 for each questionnaire. This shows that the measurement tool of the research is reliable. The mentioned questionnaire was distributed to a group of students in IELTS and TOEFL preparation courses. After receiving the questionnaires, considering descriptive and inferential statistics (Pearson Correlation Coefficient and Multifold Regression), an analysis was conducted.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Questions</th>
<th>Cronbach's alpha coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning style</td>
<td>14</td>
<td>0.98</td>
</tr>
<tr>
<td>Exam anxiety</td>
<td>37</td>
<td>0.99</td>
</tr>
</tbody>
</table>
Findings

Considering the big size of the statistical sample, in order to examine the normality of the shape of research variables, a Shapiro-Wilk test was used. The summary of calculations is presented in table 2.

Table 2: Summary of Shapiro-Wilk test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scales</th>
<th>Test Statistics</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning styles</td>
<td>Visual Style</td>
<td>0.991</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Auditory Style</td>
<td>0.991</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Motor Style</td>
<td>0.984</td>
<td>0.11</td>
</tr>
<tr>
<td>Exam anxiety</td>
<td></td>
<td>0.994</td>
<td>0.19</td>
</tr>
</tbody>
</table>

Considering the fact that significance level in all variables is greater than 0.05, distribution style in all variables is normal.

Testing Hypotheses

Main Hypothesis: There is a relation between learning styles and students' exam anxiety in IELTS and TOEFL courses in Tehran's second region.

In order to examine the relation between students' "learning styles" and "exam anxiety", in a model, a multifold regression test was used with a concurrent method, results of which are presented in tables 3 and 4. It was approved based on hypotheses such as "independence of error term", "dispersion diagram", and "normality of error term".

Table 3: Summary of regression test for examination of the relation between learning styles and exam anxiety

<table>
<thead>
<tr>
<th>Model</th>
<th>Predictor variables</th>
<th>Correlation coefficient</th>
<th>Sum of correlation coefficient</th>
<th>Adjusted correlation</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visual learning style</td>
<td>0.403</td>
<td>0.163</td>
<td>0.154</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Auditory learning style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Motor learning style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the data given in the above table, the relation between "learning styles" and "exam anxiety" was calculated to be 0.403. In other words, learning styles (visual, auditory, motor) expressed 16.3 percent of the variance related to students' "exam anxiety" in IELTS and TOEFL courses in Tehran's second region.

Table 4: Coefficients of learning styles in predicting exam anxiety

<table>
<thead>
<tr>
<th>Variables of the model</th>
<th>model</th>
<th>B</th>
<th>SE</th>
<th>(Beta)</th>
<th>t</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1)</td>
<td>intercept</td>
<td>21</td>
<td>1.1</td>
<td>18.3</td>
<td>0.01</td>
</tr>
<tr>
<td>Motor learning styles</td>
<td>Variable coefficient</td>
<td>-1.41</td>
<td>0.270</td>
<td>-0.291</td>
<td>-5.2</td>
<td>0.01</td>
</tr>
<tr>
<td>Visual learning styles</td>
<td>Variable coefficient</td>
<td>-0.72</td>
<td>0.281</td>
<td>-0.145</td>
<td>-2.6</td>
<td>0.011</td>
</tr>
<tr>
<td>Auditory learning styles</td>
<td>Variable coefficient</td>
<td>-0.79</td>
<td>0.265</td>
<td>-0.166</td>
<td>-2.99</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Considering the data given in the above table, it can be said that with an increase of 1 unit in learning styles (motor, visual, auditory), students of IELTS and TOEFL preparation courses in Tehran's second region had reduced levels of exam anxiety by 1.41, 0.72, and 0.79 units.

Subsidiary Hypotheses

There is a relation between students' visual learning style and exam anxiety in IELTS and TOEFL courses of Tehran's second region.

There is a relation between students' auditory learning style and exam anxiety in IELTS and TOEFL courses in Tehran's second region.
There is a relation between students' motor learning style and exam anxiety in IELTS and TOEFL courses in Tehran's second region.

In order to test subsidiary hypotheses 1, 2, and 3, a test for the correlation between learning styles and exam anxiety was used, results of which have been presented in table 5.

<table>
<thead>
<tr>
<th>Learning Styles</th>
<th>Regression Coefficient (r)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual learning</td>
<td>0.231</td>
<td>0.01</td>
</tr>
<tr>
<td>Auditory learning</td>
<td>0.204</td>
<td>0.01</td>
</tr>
<tr>
<td>Motor learning</td>
<td>0.279</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Considering the fact that the significance of the relation between all three styles of learning (visual, auditory, motor) and exam anxiety is smaller than error value, i.e. α=0.01, with a confidence level of 99 percent, it can be concluded that there is a relation between learning styles (visual, auditory, motor) and exam anxiety in IELTS and TOEFL preparation courses of Tehran's second region; in other words, with an increase in students' visual, auditory, and motor learning styles, students' exam anxiety will decrease.

Conclusion

The phenomenon of exam anxiety is a highly widespread problem among educational issues. This phenomenon has a negative relation with educational performance; and it is one of the important factors of poor educational performance. Generally, it can be said that exam anxiety is an unpleasant experience which affects areas such as cognition, emotions, and physiology. In sum, it can be said that exam anxiety has a negative and destructive impact on students' mental-physical health. Accordingly, it can affect their educational performance. Hence, considering the importance of the subject, this research examines the relation between learning style and exam anxiety in IELTS and TOEFL preparation courses of Tehran's second region. In the following, based on the hypotheses of the research, we draw the following conclusions:

Main Hypothesis: There is a relation between students' learning style and exam anxiety in IELTS and TOEFL preparation courses in Tehran's second region. The findings of this hypothesis, which can be inferred from the findings of the three subsidiary hypotheses, show that there is a significant relation between learning style (visual, auditory, motor) and exam anxiety in IELTS and TOEFL preparation courses of Tehran's second region. Since the concept of learning styles refers to a method preferred by individuals for processing new information and strategies which they use for effective learning, it has a significant relation with students' anxiety. In fact, according to Rezayi et al (2012), study and learning strategies can be used as a method for reducing exam anxiety.

In the first subsidiary hypothesis, the relation between visual learning style and students' exam anxiety in IELTS and TOEFL preparation courses of Tehran' second region was approved. Learners who use visual learning styles experience less exam anxiety, because they learn through seeing and observing. They have good visual memory, and they well use their memory when taking tests. In addition, because their learning is visual and because it happens within a graph, plan, graphic design, poster and so forth, they can well remember materials and have a favorable level of concentration, resulting in less exam anxiety.

In the second subsidiary hypothesis, the relation between auditory learning style and exam anxiety in IELTS and TOEFL preparation courses of Tehran's second region was approved. Learners with auditory learning styles learn through listening and hearing. Because these individuals have good auditory memories, they make the best use of group discussions, lectures, interviews, listening to stories, and so forth in classes. Hence, they experience less exam anxiety at tests; because, these individuals use repetitions, sequencing, and summarization of materials, and at tests, they get materials from their minds. As a result, they do not have exam anxiety.

Finally, in the third hypothesis, the relation between motor learning style and exam anxiety in IELTS and TOEFL preparation courses of Tehran's second region was approved. Individuals with motor learning styles learn through moving and working with objects. They act very well when rereading facts and emotions related to physical experiences. In addition, because it is difficult for such people to stay calm and silent in classes, they need to make regular changes in class activities. These people use this ability and easily overcome their anxiety at tests.

Generally, as April (2014) stated, for identifying exam anxiety, early intervention must be done and support strategies must be provided, the most important of which is learning styles. In fact, it must be noted that while many people use all three learning styles in many situations, some learners are highly dependent upon one of these three styles. Emphasis on one of the styles, and inability or unwillingness to adapt to other styles may have certain limitations for us in many situations, preventing us from effective learning, leading to anxiety in students.

In line with this, the results of a study done by Vali Mohammadi (2002) showed that those students who use learning strategies and especially higher-level strategies such as organization and monitoring have less exam anxiety. The results of a study done by Saheb Alzamani and Zirak (2011) also showed that there is an inverse and significant relation between learning and study strategies and exam anxiety. In fact, learning and study strategies can be used as a method for
reducing exam anxiety. Finally, the findings of this hypothesis are in congruence with the findings obtained from studies conducted by scholars such as Sarbaz Vatan (2014), Ghadami (2014), Rezayi et al (2012), and Pouratashi et al (2009).

Based on the findings of the research, there are the following propositions:

Considering the fact that the contents of class books are weak in terms of increasing students’ capacities for visual and auditory learning, it is recommended that those responsible for class books revise contents.

It is recommended that teachers use novel teaching methods especially educational techniques, and use visual and auditory tools for teaching in classes.

It is recommended that all subjects be implemented using a critical method in the education system in order to enhance educational quality and reduce students’ anxiety.

In future studies, we can examine the same subject in other regions, or even other institutes in other cities of the country; and we can do adaptive comparisons.

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