



Relationship between Anxiety and Creativity in High School Teachers in Kerman

F. Mehrabifar^{1,*}

¹ Teaching assistant, department of psychology and educational sciences, Payam-e-Noor University, Tehran, Iran

ARTICLE INFO	ABSTRACT
<p>Article History: Received 2 January 2022 Received in revised form 7 February 2022 Accepted 18 March 2022 Available online 23 March 2022</p> <p>Keywords: Anxiety, Creativity, High School Teachers, Cattell's Anxiety, Randsip's Creativity</p>	<p>To study the relationship between anxiety and creativity among high school teachers in the city of Kerman, the rate of teachers' anxiety was measured first and then its relation with teachers' creativity was investigated. This study is a descriptive-correlational type of research. The population of the study consisted of all high school teachers in Kerman who taught in 2013-2014. The number of subjects in the population was 2013 teachers and a sample of 236 individuals was selected from this population through stratified random sampling. To collect data, Cattell's Anxiety Inventory and Randsip's Creativity Questionnaire were used. To analyze data, applying SPSS, tables of descriptive statistics (mean, median, mode, skewedness, and kurtosis) and Pearson's inferential statistics were used. The findings showed that there was not any significant relationship between anxiety and its measures (state and trait anxiety) and creativity. However, it was observed that there was a relatively significant and positive relationship between anxiety and creativity in low anxiety or medium anxiety individuals and the two variables were relatively and inversely related in highly anxious individuals. It is suggested that since teachers play an important role in a country's educational system, teachers with medium levels of anxiety should enter the educational system so that creativity would increase and education would be improved in the society.</p>

1. INTRODUCTION

Anxiety has long been considered as a major mental disorder. However, it has been seriously paid attention to by psychiatrists and psychologists in recent decades [1].

Unfortunately, anxiety has affected the lives of so many individuals like cholera and plague all around the world and caused many psychological and physical diseases. Everywhere there is the talk of finding a way to achieve peace and quiet. Peace seems to be a lost property of the people in the twentieth century. They have looked everywhere but they have not found a trace of it. All people are apparently searching for a shelter where they can be safe from the burning rays of anxiety. About the importance of anxiety it is sufficient to quote Auden who has called the contemporary age as the age of anxiety [2]. For centuries, the anxiety phenomenon has attracted the attention of

* Corresponding author: F. Mehrabifar@gmail.com

Teaching assistant, department of psychology and educational sciences, Payam-e-Noor University, Tehran, Iran



authors. But it is strange that although anxiety has always accompanied individuals and people have frequently been faced with this phenomenon and felt it inside themselves, they do not have a clear understanding of its nature [3].

A study conducted by Zukeraze [4] defined anxiety as lack of peace, doubt, lack of confidence and incompetence in dealing with situations. Since some individuals are anxious only in some situations and some feel anxious most of the time, psychologists have differentiated between two types of anxiety in their categorizations of the phenomenon:

State anxiety: it is a temporary emotional state or situation in human organism which is characterized by conscious feeling of tension and fear and accompanied by increase in the activity of the autonomous nervous system. This type of anxiety is considered as transient anxiety since its intensity changes and fluctuates over time. State anxiety is an emotional reaction that is different from situation to situation. It depends on an individual's perception of the intensity of the danger and threat a situation poses. Anxiety before giving a speech is an example of state anxiety.

Trait anxiety: it is considered as the relatively stable individual differences in susceptibility to anxiety. In other words, it refers to differences among individuals in responding to threatening situations and is accompanied by increase in the intensity of state anxiety. Trait anxiety is a personality trait that determines the frequency and intensity of one's emotional reaction to stressful conditions. In this respect there are clear differences among individuals. This type of anxiety, is part of a person's character and not a feature of the situation one is faced with Izadi [5].

Creativity is a basic psychological need. At present, although the true nature of human creativity has not been fully understood and what has been achieved so far shows some discrepancy, the same achievements and findings which are based on research on creativity can serve as a support for planning various methods to foster creativity in individuals [6].

Nowadays, organizational managers are under pressure to find ways to increase creativity in their organizations due to globalization, competition and rapid changes that take place every day. Thus, they apply different means to improve creativity in their organizations [7].

Creativity is one of the most interesting and fruitful phenomena that take place in human mind about which fewer studies have been conducted compared to other mental competences [8]. Since many of the innovations come from critical thinking and the process of thinking has been a topic of investigation in philosophical and logical discussions from early days, it might be possible to trace creativity or critical thinking in the fields of philosophy and logic as the primary ground for studying the topic [9].

According to Mednick [10], creativity consists of "reshaping associative elements in the mind and giving them new forms that are consistent with particular requirements or useful in a way or another. The less similar the elements of the new combination are, the more creative the individual's idea would be."

Today's complex life is changing every moment and creativity is a necessity for continuing to have an active life. Contemporary societies need change and creativity to stay alive and escape death and stagnation. Therefore, creativity and the presence of creative individuals are indispensable conditions for the whole society and all the organizations in it. One of the major organizations in every society is the education department [11].

Reviewing the goals of education in the third millennium shows that facing with complex individual and social factors requires individuals who can think creatively. This point is now the focus of attention for many intellectuals and community leaders especially in the developing societies. Education can affect creativity in different ways one of which is having creative and innovative teachers. The staff in organizations are an important source of providing original ideas and thoughts each of which can alone bear the burden of a problem in the organization [12].

It is a fact that creativity in its proper sense is the best mental characteristic of a productive and thoughtful person. It is a sign of balanced growth in one's personality and excellence and a response to the everlasting human need to open dead ends and find a way to what is beyond boundaries. Several studies have been conducted separately on the relationship between creativity and anxiety. However, research about the relationship between these two variables among teachers seems to be missing. Darvar [13] studied the prevalence of state and trait anxieties the factors that cause them among students and showed that 1- there were significant relationships between anxiety and the variables of students' grade point averages (GPAs), presence of a sick individual in the family and religious practice and 2- there was a significant relationship between students' trait anxiety and their mothers' employment outside the home.

Jegede [14] conducted an etiological study called "reasons for students' anxiety towards chemistry instruction" and found that anxiety towards chemistry instruction was lower among female students compared to male students.

Kubiszynand Brich [15] came to the conclusion that there was an inverse relationship between test anxiety and the participants' self-esteem and that a significant relationship existed between anxiety in students and their educational progress. In their study, mean test anxiety scores were higher for females than males but mean self-esteem scores were higher for males than females.

KotaOhata [16], a professor at the International Christian University in Tokyo, carried out a study entitled "Sources of Academic Anxiety among Japanese Students of English" in 2005 and investigated the causes and sources of anxiety among students. He concluded that there was an inverse relationship between academic anxiety and academic performance.

A study was performed by the professors at the Faculty of Educational Sciences at Pune University in India on the relationship between academic self-concept and school anxiety. The results showed that there was a significant negative relationship between academic self-concept and school anxiety and generally Iranian students had better self-concepts than their Indian peers. There was a significant difference between school anxiety in Iranian and Indian students. In both the Iranian and the Indian samples, school anxiety was higher for the female participants than the male ones.

Sabaghian [17] studied the relationship between creativity and demographic features among primary school teachers in the city of Semnan. The results showed that the creativity of primary school teachers in Semnan was at a low level.

Samdani [18] investigated the relationship between personality traits and creativity among the school principals in District 1 in the city of Kerman. The findings indicated that there was not a significant relationship between personality traits.

Khaleefa [19] investigated the effect of gender differences on the rate of creativity. The results showed that there was a significant difference between men and women regarding their levels of creativity; men got higher scores on the measures of creativity than women.

Since schools are rich in human resources, i.e. the students who would undertake significant duties in society in the future we need to have teachers without anxiety. This way, we are more likely to educate a more productive and effective human resource. Thus, teachers are required who can achieve success in the face of stressful situations by being creative and having new, novel and innovative ideas. It is such teachers who can educate healthy and competent individuals for the society.

In a stressful situation such as that of a school, teachers need high levels of creativity to overcome stress and anxiety. So, this study was an attempt to investigate the relationship between anxiety and creativity among school teachers.

1.1. Major Hypothesis

There is a relationship between anxiety and creativity in high school teachers in Kerman.

1.2. Minor Hypotheses

There is a relationship between teachers' low anxiety and creativity.

There is a relationship between teachers' high anxiety and creativity.

There is a relationship between teachers' trait anxiety and creativity.

There is a relationship between teachers' state anxiety and creativity.

2. RESEARCH METHOD

Considering the topic of the study and its aim, the descriptive correlation method of research was applied.

A population of 2013 individuals was used in this study which comprised all school teachers at high schools in Kerman who had different university degrees.

Sample size was 236 individuals based on the Cochran's formula and stratified random sampling was used to select the subjects.

Two questionnaires were applied to collect data:

To measure anxiety, Cattell's Anxiety Inventory was adopted and revised by the researcher. This inventory consisted of 40 items and each item measured one component of anxiety.

Randsip's Creativity Questionnaire which comprised 50 items was used. Items were scored and put on a scale of very low, low, high and very high. This questionnaire was published in the personal journal [20].

To determine the validity of the questionnaires, the common method of validity percent was used and the validities of the anxiety inventory and the creativity questionnaire were 0.92 and 0.84, respectively.

The reliabilities of the anxiety inventory and the creativity questionnaire were measured using the Spearman's coefficient of correlation. They were 0.89 and 0.835 for the anxiety and creativity questionnaires, respectively. In addition, the internal reliabilities of the anxiety inventory and the creativity questionnaire as measured by the Cronbach's Alpha were 0.731 and 0.874, respectively.

3. DATA ANALYSIS METHOD

This study defined the research variables first. Then, Pearson's correlation was used as an inferential test to investigate the relationship between the two variables as well as the multivariate regression analysis.

4. FINDINGS

A: descriptive findings of the study

The scores of the anxiety variable and its components

Table 1. Descriptive statistics of the teachers' anxiety and its components and creativity

variables	anxiety	trait anxiety	state anxiety	Creativity
number	236	236	236	236
mean	36.5	17.7	18.9	146.2
median	38.00	18.00	19.00	143.00
mode	41.00	18.00	18.00	141.00
Standard deviation	8.75	3.97	5.94	14.52
skewedness	-0.129	-0.027	-0.095	0.545
kurtosis	-0.532	0.111	-0.764	-0.105
minimum	16.00	8.00	5.00	115.00
maximum	60.00	29.00	32.00	185.00
Score range	0–80	0–20	0–20	50–200

B: inferential findings of the study

First hypothesis: there is a relationship between anxiety and creativity in high school teachers in Kerman.

According to data analysis, it was found that Pearson's coefficient of correlation between the two variables of anxiety and creativity among teachers was 0.086 with the p-value (significance) of 0.186. This significance is larger than the significance level of $\alpha=0/05$ Thus, at this level null hypothesis, i.e. that there isot any relationship between the variables is not disconfirmed and it can be stated that there is not a significant linear relationship between anxiety and creativity among high school teachers in Kerman (table 2).

Table 2. Statistics for Pearson's correlation test of the relationship between teachers' anxiety and creativity in high schools in Kerman

variable test	Creativity					
	Pearson			significant relationship	type of relationship	Eta square
anxiety	coefficient of correlation	significance	number			
	0.086	0.186	236	non	relative and direct	0.200

Second hypothesis: there is a relationship between low anxiety and creativity in high school teachers in Kerman.

Data analysis showed that Pearson's coefficient of correlation between the variables of low anxiety and creativity among teachers was 0.168 with the p-value (significance) of 0.049. This was smaller than the $\alpha=0/05$ level of significance. Thus, at this level null hypothesis was disconfirmed and we concluded that there is a significant positive relationship between low anxiety and creativity in high school teachers in Kerman (table 3).

Table 3. Statistics for Pearson's correlation test of the relationship between teachers' low anxiety and creativity in high schools in Kerman

variable test	Creativity					
	Pearson			significant relationship	type of relationship	coefficient of determination (R ²)
high anxiety	coefficient of correlation	significance	number			
	0.168	0.049	138	Yes	direct	0.028

Third hypothesis: there is a relationship between high anxiety and creativity in high school teachers in Kerman.

Data analysis revealed that Pearson's coefficient of correlation between the variables of high anxiety and creativity in high school teachers was -0.142 with the p-value (significance) of 0.164. This was larger than the significance level of $\alpha=0/05$. So, null hypothesis would not be disconfirmed at this level and it can be stated that there is not a significant relationship between high anxiety and creativity in high school teachers in Kerman (table 4).

Table 4. Statistics for Pearson's correlation test of the relationship between teachers' high anxiety and creativity in high schools in Kerman

variable test	Creativity					
	Pearson			significant relationship	type of relationship	coefficient of determination (R ²)
low anxiety	coefficient of correlation	significance	number			
	0.142-	0.164	98	non	relative and inverse	0.02

Fourth hypothesis: there is a relationship between trait anxiety and creativity in high school teachers in Kerman. The results of data analysis showed that Pearson's coefficient of correlation between the variables of trait anxiety and creativity in high school teachers was 0.083 with the p-value (significance) of 0.202. This was larger than the significance level of $\alpha=0.05$. So, null hypothesis would not be disconfirmed at this level and it can be stated that there is not a linear relationship between trait anxiety and creativity in high school teachers in Kerman (Table 5).

Table 5. Statistics for Pearson's correlation test of the relationship between teachers' trait anxiety and creativity in high schools in Kerman

variable test	Creativity					
	Pearson			significant relationship	type of relationship	Eta square
trait anxiety	coefficient of correlation	significance	number			
	0.083	0.202	236	non	relative and direct	0.079

Fifth hypothesis: there is a relationship between state anxiety and creativity in high school teachers in Kerman. The results of data analysis indicated that Pearson's coefficient of correlation between the variables of state anxiety and creativity in high school teachers was 0.071 with the p-value (significance) of 0.274. This was larger than the significance level of $\alpha=0.05$. So, null hypothesis would not be disconfirmed at this level and it can be stated that there is not a linear relationship between state anxiety and creativity in high school teachers in Kerman (Table 6).

Table 6. Statistics for Pearson's correlation test of the relationship between teachers' state anxiety and creativity in high schools in Kerman

variable test	Creativity					
	Pearson			significant relationship	type of relationship	Eta square
State anxiety	coefficient of correlation	significance	number			
	0.071	0.000	236	non	relative and direct	0.134

5. DISCUSSION AND CONCLUSION

There is not a significant relationship between anxiety and creativity among high school teachers in Kerman. However, with increase in the anxiety scores for teachers, there was a relative increase in their creativity scores. This shows that there is a direct relative relationship between these two variables. There is a significant positive relationship between the anxiety and creativity of the individuals who have low to moderate levels of anxiety. In other words, for the teachers who have low to moderate levels of anxiety, the rate of creativity increases and for the ones with high scores on anxiety, there is a relative and inverse relationship between anxiety and creativity. It means that creativity decreases in teachers who are highly anxious.

Karimi [21] studied the relationship between creativity and anxiety and showed that there was a significant relationship between anxiety and creativity. The findings of this study are consistent with the same result since it was shown that there was a significant relationship between anxiety in individuals with low to moderate scores on anxiety and their level of creativity. Mitajake, Mirzlo and Quack also showed that there was a significant relationship between anxiety and creativity. The individuals who got high scores on creativity had lower scores on anxiety [22]. This finding was in line with the results we achieved. To explain the result of the study it can be said that the people who have low levels of anxiety, are not motivated to perform well on the tasks assigned and thus they get low scores on those tasks. Individuals with moderate levels of anxiety are motivated by this anxiety and perform well on the tasks. Since they are moderately anxious, their anxiety does not interfere with their performance and they get higher scores compared to the individuals without anxiety. Adopting the same logic, it can be stated that highly anxious individuals are even more motivated than the previous group to perform well. However, anxiety would interfere with their performance though they are highly motivated. Therefore, their task performance scores decreases as a result of high anxiety [23].

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

REFERENCES

- [1] Norouzi, Sh. (1998). *Rate of anxiety among undergraduates at Shiraz University and its relationship with the variables of age, gender, marital status, economic status and major* (Unpublished master's thesis). Shiraz University, Iran.
- [2] Malekmahmoudi, A. (2006). *Treating anxiety and depression*. Yazd, Iran: Kosar-e-Hedayat Publications.
- [3] T-Back, A., & Emery, G. (2010). *A cognitive model of anxiety*. Tehran, Iran: Young Scholars Publications.
- [4] Keraze, Z., & Dadsetan, M. (2002). *Psychological disorders*. Tehran, Iran: Arshad Publications.
- [5] Izadi, M. (2002). *Impact of cognitive-developmental therapy on trait and state anxiety in two groups of 19–29-year-old male and female subjects in Ahwaz* (Unpublished master's thesis).
- [6] Soleimani, A. (2002). *Construction and test standardization of multiple aspects of creativity* (Unpublished doctoral dissertation).
- [7] Kahai, S. S., Sosik, J. J., & Avolio, B. J. (2003). Effects of leadership style, anonymity, and rewards on

- creativity-relevant processes and outcomes in an electronic meeting system context. *The Leadership Quarterly*, 14(4–5), 499–524. [https://doi.org/10.1016/S1048-9843\(03\)00049-3](https://doi.org/10.1016/S1048-9843(03)00049-3)
- [8] Tasbihsazan, R. (2001). Psychology of creativity development and its relation to personality and intelligence. *Rahyaf Journal*, 2.
- [9] Rezaian, A. (2011). *Principles of management*. Tehran, Iran: Samt Publications.
- [10] Mednick, S. A. (1962). The associative basis of the creative process. *Psychological Review*, 69(3), 220–232. <https://doi.org/10.1037/h0048850>
- [11] Gholampour, A. (2010). Creativity and innovation in educational organizations. *Educational Management Quarterly*, 7(28), 3–8.
- [12] Manteghi, M. (2011). *Creativity phenomenon in primary school books: Investigating the effect of creativity instruction in primary school students and introducing a model for creative teaching* (Unpublished doctoral dissertation). Tehran University, Iran.
- [13] Darvar, Z. (2009). *Prevalence of state and trait anxiety and the factors that affect it among students in a state high school for girls in Lahijan* (Unpublished master's thesis). Tehran University of Medical Sciences, Iran.
- [14] Jegede, S. A. (2007). Students' anxiety towards the learning of chemistry in some Nigerian secondary schools. *Department of Curriculum Studies, Faculty of Education, University of Ado*.
- [15] Kubiszyn, T., & Brich, G. (2007). *Correlation test anxiety on self-esteem and achievement in the students*. University of Boston.
- [16] Kotaohata. (2005). *Potential sources of anxiety for Japanese learners of English: Preliminary case interviews with five Japanese college students in the U.S.* International Christian University, Tokyo, Japan.
- [17] Sabaghian, Z. (2009). *Relationship between creativity and demographic variables in primary school teachers in Semnan* (Unpublished master's thesis). Semnan University, Iran.
- [18] Samdani, M. (2006). *Relationship between personality traits and creativity among school principals in District 1 in the city of Kerman* (Unpublished master's thesis).
- [19] Khaleefa, O. H., Erdos, G., & Ashria, I. H. (1996). Gender and creativity in an Afro-Arab Islamic culture: The case of Sudan. *The Journal of Creative Behavior*, 30(1), 52–60. <https://doi.org/10.1002/j.2162-6057.1996.tb00757.x>
- [20] Moghimi, A. (1998). *A research approach to organization and management* (3rd ed.). Tehran, Iran: Termeh Publications.
- [21] Karimi, M. (2006). *In search of the roots*. Tehran, Iran.
- [22] Morsali, F. (2005). *Magnitude and type of obstacles to managers' creativity and its relation to their tendency to entrepreneurship* (Unpublished master's thesis). Faculty of Literature and Humanities, Bahonar University of Kerman, Iran.
- [23] Gall, M., Borg, W., & Joyce, P. (2008). *Quantitative and qualitative research methods in educational sciences and psychology* (4th ed.). Tehran, Iran: Samt Publications.