

The Effectiveness of Training Close Reading on Components of Exam Anxiety (Reducing Social Credit, Cognitive Barriers and Tension mode)

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Abstract

In this study, the effectiveness of training close reading has been evaluated on reducing exam anxiety (reducing Social Credit, cognitive barriers and tension mode) of female students in the 8th grade. The research method was an experimental type. The statistical population of the research was female students of the 5th district of Tehran who was studying at the eighth grade during 2016-2017. The research sample included 40 students who were selected by cluster sampling method and they were randomly replaced in two groups. The fundamental techniques of close reading were trained to the experimental group in 8 sessions, while, the control group did not receive these trainings during this period. Then, anxiety exam was taken from the experimental group and controlling the anxiety of the above exam after the test. The results analyzed by using covariance analysis test (ANCOVA). Results showed that there was a significant difference ($P \leq 0.05$) between the experimental and control groups. Therefore, using close reading can lead to the reduction in exam anxiety.

Keywords: Close reading, Exam anxiety, Reducing social credit, Cognitive barriers, Tension mode.

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1. Introduction

Studies show that after intelligence and ability, exam anxiety recognized as the most important factor affecting the academic performance (Schnell et al., 2015). Researches in this area have shown that exam anxiety can be disturbed in the performance and progress of guidance and high school students as well as in collegians (Putwain & Aveyard, 2018). This happens due to the disturbance and cognitive disorder that result from anxiety (Putwain et al., 2010). A research done has shown that there is a relationship between exam anxiety and performance (Putwain & Aveyard, 2018; Korhonen et al., 2018; Thomas et al., 2017; Fadakar and Salary, 2015). In a study conducted in Hong Kong, the results indicated that there was a direct and positive relationship between exam anxiety and dejection, and it reported that in this society, the exam anxiety has a relationship with suicide (Lee et al., 2006).

The results of other studies indicate that exam anxiety also has a close relationship with students' academic compatibility (Sedaghat and Safari, 2015). Academic compatibility is a set of reactions by which a person is prepared to provide a balanced reply and coordinate with the school conditions and the activities that the environment requires from him. Academic compatibility includes school satisfaction, academic progress, communication with other students, the opinion of school authorities about student performance, and so on (Scott et al., 1989). Philips et al., (1980) on the basis of academic compatibility, suggest a fundamental change in school organization, structure of curriculum, educational methods, and philosophy of education to reduce the exam anxiety. Evidences suggest that students with exam anxiety have higher education drop than their classmates, and in some cases they dropout (Saap, 1999; Hojjati, 2014; Barnard & Chapman, 2018).

Researchers have evaluated the exam anxiety components from different angles; Morris and Liebert (1970) and Spielberger (2010) have presented a distinct component of concern and excitement for exam anxiety. The important part of the exam anxiety is to concern about the component and digressive cognitive activity that includes high cognitive anxiety about performance, consequences of failures from the exam, thoughts about bad testing and humiliation, the assessment of your own ability in comparison with others and negative expectations from the performance. Another important component refers to the autonomic and physiological nervous reactions such as heart palpitations, stomach upset, headache and anger. This phenomenon often leads to negatively cognitive assessment, unfavorably physiological reactions and academic performance drop and plays a destructive and inhibitory role in the students' mental and educational health (Sarason, 1975). Dortaj (2013) in a study entitled the

relationship between the value of task and exam anxiety: Mohammadi (2015) showed that reading metacognitive strategies have a positive relationship with exam anxiety in collegians. Derakhshan, and Teimuri (2015) concluded that reading strategies would improve academic performance and reduce exam anxiety.

Among the important variables that are associated with exam anxiety it can be pointed to the learning guidelines. Many students and even collegians suffer frustration and failure due to the lack of strategic study and learning skills (Durak et al., 2006). However, researches about successful learners including (Sporer et al., 2009; Tong & McBride, 2017) have shown that these learners are distinguished from other learners by employing cognitive and metacognitive strategies. Research findings of Yukselir (2004) and Menachem (2015) have shown that perceiving the success in language training depends on the use of targeted reading strategies. Successful readers are aware of the usage of the strategy and the reason they are using the strategy, and these people use strategies more than less successful readers. In addition, they can coordinate and change these strategies when needed. Learning cognitive and metacognitive strategies not only affects reading performance and visual memory, but also affects the speed of information processing (Daemi, 2012; Yarmohammadian et al., 2014). The results of the research by Rheffler et al., (2018) showed that the way of students' impression from teacher motivational supports has a relationship with exam anxiety and their learned helplessness. The results of Charon et al., (2016) concluded that strategies of close reading have significant impact on creative writing, reflective writing and improving dependent skills to students' education.

According to researchers' estimates in various studies, the prevalence of exam anxiety in students is reported to be between 10% and 30% (Morris & Morris, 1999). This estimate for high school students in Iran is reported to be 17.2% (Abolqasemi, 2002). In this study we address to this question that whether the training of close reading strategies affects the reduction of exam anxiety and its components in students or not?

Based on the mentioned problems the research hypotheses are as follow:

- Training close reading strategies is effective on reducing the exam anxiety among girl students of 8th grade
- Training close reading strategies is effective on the social derogation component of girl students of 8th grade
- Training close reading strategies is effective on the cognitive barriers component of girl students of 8th grade

- Training close reading strategies is effective on the tension component of girl students of 8th grade.

2. Methodology

The present study is an experimental design with pre-test, post-test and control group. The participants randomly replaced in two experimental and high anxiety control groups. So, at first, both groups were subjected to a pre-test (Exam Anxiety Questionnaire) and replaced in the groups after calculating the pre-test scores. After completing the experiment only the experimental group received the treatment and then a post-test was taken from two groups. The experimental group who obtained high exam anxiety score, participated in the close reading training sessions, but the control group did not participate in this program. The statistical population of this study was all female students in Tehran's 5th district, in the academic year of 2016-2017 that were studying at the 8th grade (4709 individuals).

Sampling method was so that Tehran 5th district was selected as a cluster sampling. In this way, after obtaining a license from the university and the education department for conducting the research, the list of first secondary schools of girls in district 5 was prepared.

3. Instruments

Friedben Exam Anxiety Questionnaire (1997): This test developed by Friedman and Bendas-Jacob (1997) and has 23 questions that consists of three subscales of social derogation (questions 1-8), cognitive barriers (questions 9-17) and tension (questions 18-23). The Cronbach's alpha coefficient in the sample of 3700 individuals for each of the subscales was respectively 0.91, 0.85 and 0.81. In the research of Baezzat et al., (2012) reliability of the questionnaire by using Cronbach's alpha method for the subscales were respectively 0.90, 0.85 and 0.83, and for the whole questionnaire was 0.91. In the present study, the reliability of the subscales was respectively 0.82, 0.87 and 0.87, and the overall reliability was 0.94. Confirmatory factor analysis of X²/_{df}, CFI, GFI, AGFI, SRMR, RMSEA) and RMSEA for the questionnaire were respectively 385, 1.75, 0.98, 0.95, 0.92, 0.03 and 0.06.

The training of fundamental techniques of close reading conducted for both experimental groups by the researcher during 8 sessions (two 75-minute sessions per week). The design of the mentioned program set, based on the book of learning and study methods (Seif, 2015). A brief description of the meetings is given in Table 1.

Table 1. Summary of intervention performance sessions of close reading strategies

Number of sessions	Content summary of every session
Session 1 Close reading, organizing, summarizing Plan	Introduction and motivation (10 minutes), Training the close reading (5 minutes), Fan training of organizing and summarizing plan (10 minute), Practical work with the text "Research" (30 minutes), Giving feedback (15 minutes), Final conclusion, elimination of possible mistakes of students and presenting homework "Niasar" (10 minutes)
Session 2 Organizational Plan	Review the contents of the past session (5 minutes), homework review (15 minutes), organizational plan training (5 minutes), practical work with the text "consequences of movement poverty for girl students" (30 minutes), giving feedback (15 minutes), elimination of possible mistakes of students and presenting homework "Golabgiran" (10 minutes),
Session 3 Pyramid and Radiation Plans	Review the contents of the past session (5 minutes), homework review (15 minutes), pyramid scheme training (5 minutes), practical work with the text "Asghar Farhadi's Concerns" (15 minutes), giving feedback (5 minutes), final conclusion, elimination of possible mistakes of students and presenting homework (George Lucas Creative Ideas) (10 minutes). Radial Design Training 5 Minutes. Practical Work with the text, "Nutrition role for Students (15 minutes), giving feedback (5 minutes)," final conclusion, elimination of possible mistakes of students and presenting homework "Guessing Art" (15 minutes).
Session 4 Cell and overlapping plans	Review the contents of the past session (5 minutes), homework review (15 minutes), cell design training (5 minutes), practical work with the text "Mountain Karkas" (15 minutes), giving feedback (15 minutes), interrogation training (5 Minutes), practical work with the text "yoga" (15 minutes), giving feedback (15 minutes), final conclusion, elimination of possible mistakes of students and presenting homework "History of Mathematics" (5 minutes).
Session 5 Mark	Review the contents of the past session (5 minutes), homework review (15 minutes), mark training (5 minutes), practical work with the text "Alborz High School History" (30 minutes), giving feedback (15 minutes), final conclusion, elimination of possible mistakes of students and presenting homework (Sohrab Sepehri's Biography) (10 minutes).
Session 6 Annotation	Review the contents of the past session (5 minutes), homework review (15 minutes), margin training (5 minutes), practical work with the text "Persepolis" (30 minutes), giving feedback (15 minutes), final conclusion, elimination of possible mistakes of students and presenting homework "Cinematic Film Review of Hello Mumbai " (10 minutes).
Session 7 Notation	Review the contents of the past session (5 minutes), homework review (15 minutes), training summery technique (10 minutes), practical work with the text "Improvement methods of observation" (30 minutes), giving feedback (15 minutes), final conclusion, elimination of possible mistakes of students and presenting homework "Water Therapy" 10 minutes.
Session 8 Final pluralization, question and debugging	Review the contents of the past session (5 minutes), homework review (15 minutes), final conclusion, repetition, and review of the material provided in the previous sessions (10 minutes), the presentation of a text from the book Basic Social Studies of the 8th grade, the elaboration of a number of questions along with provide an answer after close reading the book by using the techniques mentioned in the past sessions (50 minutes), and elimination of possible mistakes of students, and giving feedback (15 minutes).

4. Findings

After implementing the research, the pre and post-test scores analyzed through descriptive and inferential methods via applying SPSS software. At the level of descriptive statistics for the variances studied, the mean of statistics, standard deviation, and range of scores, skewness and Kurtosis have reported. Inferential analyzes of the findings were done by statistical test of covariance analysis. The descriptive indexes of the scores of exam anxiety components for the pre and post-test phases in the test and control groups are presented in Table 2 .

Table 2. Descriptive indexes of the grades in test and control groups in terms of exam anxiety

Resource	statistics		No.	Mean	SD	Min.	Ma x.	Skewness	Kurtosis
	group	Test							
Reduce Social Credit	Tentative	pre-test		22.65	5.22	12	31	-0.42	-0.21
		Post-test	20	20.55	6.62	9	32	0.06	-0.49
	Control	pre-test	20	23.80	4.21	17	32	0.03	-0.88
		Post-test		23.25	3.58	18	32	0.45	0.24
Cognitive barriers	Tentative	pre-test		22.15	4.46	15	31	-0.36	-0.34
		Post-test	20	17.75	6.38	9	27	0.09	-1.54
	Control	pre-test	20	20.20	5.42	12	34	0.62	0.51
		Post-test		20.15	3.95	12	26	-0.31	-0.76
Tension mode	Tentative	pre-test		15.80	3.65	10	24	0.48	0.13
		Post-test	20	14.45	5.51	6	24	0.29	-0.80
	Control	pre-test	20	15.55	2.85	13	22	1.34	0.92
		Post-test		16.80	3.03	12	21	-0.16	-1.38

The results of Table 2 show that there is no significant difference between the mean scores of the exam anxiety dimensions in the pre-test stage in the test and control groups. But in the post-test stage, the mean scores of all three dimensions of the exam anxiety in the test group compared to the control group. Amplitude of the scores in the pre-test of the two groups is approximately the same. In post-test, the lowest score of the test group in all three dimensions is significantly lower than the control group.

Regarding the normalization of the distribution of the dependent variable, if the values of skidding and elongation are zero or nearly zero, it will indicate the normal distribution, and the values larger or smaller than -2 and +2 indicate abnormal distribution. A review of the data in Table 1 shows that the amounts of skidding and elongation of the pre-test scores of the test and control groups are in the normal range of -2 and +2.

Analysis of covariance (ANCOVA) used to assess the statistical significance of the differences observed in the post-test. Before performing the statistical test of covariance analysis, the basic hypotheses for covariance analysis were investigated.

5. Investigating Hypotheses

The evaluation of the normal distribution of scores by examining the values of skewness and kurtosis of the dependent variable which is also presented in Table 1 shows that the distribution of the mean scores of the dependent variable is normal. The SPSS normal test (Shapiro-Wilk) is also presented in Table 3.

Table 3. Shapiro-Wilk test results

Variable	Statistics group	Z	DF	Sig.
Reduce the social credit	Tentative	0.97	20	0.67
	Control	0.96	20	0.65
Cognitive barriers	Tentative	0.97	20	0.73
	Control	0.96	20	0.44
Tension mode	Tentative	0.96	20	0.60
	Control	0.90	20	0.05

As shown in Table 3, based on the results of the Shapiro-Wilk test, as the significance level of the Z statistic of Shapiro-Wilk test for all dependent variables is not significant (the significance level is greater than or equal to 0.05), the parametric test can be used. Therefore, the assumption of the normal distribution of the dependent variable scores is established in the groups.

Levene test was used in order to evaluate the conditions for equality establishment of the variances in the test and control groups. Table 4 shows the results of the Levene test.

Table 4. Levene test results for homogeneity analysis of variance of dependent variables scores in pre-test

Source	F	df_1	df_2	Sig.
Reduce the social credit	0.38	1	38	0.54
Cognitive barriers	0.81	1	38	0.37
Tension mode	1.17	1	38	0.29

The homogeneity assumption of the variance of the scores within the groups was evaluated in the dimensions of exam anxiety variables by using the Levene test. Given the F values of the Levene test in Table 4, it can be observed that these values are not significant at the level of $\alpha = 0.05$. Therefore, it can be said that the variances are homogeneous.

To evaluate the homogeneity of the slope of the regression line, the interactions between the groups and the pre-test scores were examined. If the interaction between the groups and the pre-test scores is not statistically significant, there is no violation of the assumption, and it can be said that the assumption of homogeneity of the regression is established.

Table 5. Homogeneity pre-assumption test for regression coefficients

Sources of changes		Sum of squares	df	Mean squares	F	Sig.
Group	Dimension 1	42.12	1	42.12	1.72	0.020
interaction and pre-test	Dimension 2	65.67	1	65.67	3.06	0.090
	Dimension 3	25.78	1	25.78	1.68	0.020

In the Table 5, the results of the homogeneity test of regression coefficients are presented. The amount of F calculated in the group interaction and the pre-test for the dimensions of the exam anxiety variables were not significant ($P > 0.05$). Therefore, the data support the hypothesis of homogeneity of the regression slopes and covariance analysis can be used for these variables.

5.1. Evaluating Research Hypotheses

-Training close reading guidelines will increase the social value of female students of the eighth grade.

ANCOVA test was conducted to evaluate the effect of close reading guidelines on social value of students (first dimension of exam anxiety) due to the existence of hypothesis. The results of the covariance analysis test are presented in Table 6.

Table 6. The result of covariance analysis for the variable of students` social derogation decline

Sources of changes	Sum of Squares	DF	Mean Squares	F	Sig.	η^2
Pre-test	155.55	1	155.55	6.25	0.02	0.008
group	48.08	1	48.08	1.93	0.17	
Error	921.15	37	24.90			
Total	20334	40				

The data in Table 5 show that the calculated F value for the variable of social derogation decline is not significant in the test group. Therefore, the results of covariance analysis indicate that the program of close reading education has not been effective on the first dimension of students' exam anxiety.

- Training of close reading will reduce the cognitive barriers of girl students of the eighth grade.

ANCOVA test was conducted to evaluate the effect of close reading programs on student's cognitive barriers (second dimension of students` exam anxiety), due to the existence of hypothesis. The results of the covariance analysis test are presented in Table 7.

Table 7. The result of covariance analysis for students` cognitive barriers

Sources of changes	Sum of Squares	DF	Mean Squares	F	Sig.	η^2
Pre-test	231.06	1	231.06	10.19	0.003	0.015
group	96.62	1	96.62	4.26	0.04	0.006
Error	839.24	37	22.68			
Total	15492	40				

The data in Table 7 show that the calculated F value for students' cognitive barriers is significant in the test group. Therefore, the results of covariance analysis show that the program of close reading training is effective on the second dimension of students` exam anxiety. $F(1,37) = 4.26, P < 0.05, \eta^2 = 0.006$. Based on this result, it

can be said that the training of close reading strategies reduces the average of post-test scores of students in the test group. But it explains only 0.6% of the total variance.

- Training of close reading will reduce the tension of female students of the eighth grade.

The ANCOVA test was conducted to evaluate the effect of close reading programs on students' tension (third dimension of exam anxiety), due to the existence of hypothesis. The results of the covariance analysis test are presented in Table 8.

Table 8. The Result of covariance analysis for students' tension

Sources of changes	Sum of Squares	DF	Mean Squares	F	Sig.	η^2
Pre-test	94.07	1	94.07	11.08	0.002	0.009
group	10.89	1	10.89	1.28	0.26	
Error	314.08	37	8.50			
Total	10237	40				

The data in Table 7 show that the calculated F value for students' tension is not significant in the test group. Therefore, the results of covariance analysis indicate that the program of close reading training is not effective on the third dimension of students' anxiety. The result of covariance analysis for the exam anxiety variable is generally presented in Table 9.

Table 9. The result of covariance analysis for exam anxiety variable

Sources of changes	Sum of Squares	DF	Mean Squares	F	Sig.	η^2
Pre-test	2406.55	1	2406.55	22.97	0.001	
group	636.92	1	636.92	6.08	0.02	0.005
Error	3876.40	37	104.77			
Total	134415.00	40				

The data in Table 9 show that the calculated F value for exam anxiety is significant in the test group. Therefore, the results of covariance analysis indicate that close reading program is effective on students' exam anxiety. $n=.005F(1, 37) = 6.08$, $P < 0.05$. Based on this result, it can be concluded that close reading training reduces the average post-test scores of students in the test group. But only about 0.5% of the total variance is explained. Regarding the findings of the method of close reading training has been effective only on the second dimension of exam anxiety. It has been able to reduce the students' exam anxiety by reducing cognitive barriers.

6. Conclusion

The purpose of this study was to determine the effectiveness of training close reading strategies on the reduction of exam anxiety (social derogation, cognitive barriers and tension) among female students of the 8th grade in Tehran. One of the findings of this study related to the training of close reading strategies which was generally effective in reducing the exam anxiety. Studies of Mohammadi et al., (2017), Thomas et al., 2017, Rasouli et al., (2018), Rafelder et al., (2018), Karon et al., (2016) also confirm that study skills are effective in reducing exam anxiety and improving learning and memory. In explaining this finding, it can be said that a small amount of warning and creation and motivation in students lead to lesson planning and their more effort (Sibly and Atkinson, 1994).

On the other hand, training study strategies can have a positive impact on students' self-concept gradation (Sud and Sharma, 2001), and naturally, following this effect, students' self-esteem will be improved which is a factor in reducing exam anxiety. It can be said that students who have higher levels of learning strategies have more nobility and knowledge to their own self-concept and strengths. These people have more and more aware of their abilities and weaknesses. Having a positive self-concept also leads to a better performance in other self-concepts. As a result, these people have reasonable expectations of themselves about the exam and its outcome, and this knowledge and nobility will reduce fears and worries and, consequently, their anxiety.

Academic self-concept also indirectly affects social self-concept. Self-perception in high school students includes areas of academic competence, social acceptance by peers and participation in sports activities. Research findings showed that a group who were under the train of learning strategies and study, obtained higher academic self-concept than students who did not receive any training (Grolink and Ryan, 1990). In explaining this assumption, the results of the research by Callahan (2001) on the effectiveness of training learning strategies on students' self-concept showed that improvement of students' exam anxiety increases their self-concept.

The second finding of the present research showed that educating the close reading strategies does not affect the social derogation component. In explaining this finding, it can be said that the self-concept of students who experience the exam anxiety affects the acceptance of the person by others.

Another finding of the present study was that the cognitive barriers which are reduced due to the training of close reading strategies. It has often been seen that students who suffer from exam anxiety have negative and unrealistic thoughts of them. In fact, it is not anxiety that leads directly to lowering performance and lower

individual scores in a test, but the underlying causes of this problem are the thoughts of unsuccessful people who seek their anxiety (social derogation, cognitive barriers, tension). An important part of the cognitive symptoms of exam anxiety is the negative thoughts and self-esteem.

Other symptoms include the inability to organize thoughts, difficulty concentrating, difficulty remembering key words and concepts, worrying thoughts about better acting of others and comparing oneself with others. Since people by obtaining close reading skill find the ability to focus on their own activity and to accept their own study responsibility and to be self-regulating, this self-regulation affects students' cognitive performance and avoid from mental engaging with retarded thoughts and concern about performance during the exam and the assessment position.

The latest findings from this study showed that close reading instruction is not effective in reducing the tension component. Maanavipour and Zolghadr (2014) showed that stress relief training is effective in exam anxiety. In conclusion, it can be said that as a result of the exam anxiety, students are incapable of accurate and focused reading and this leads to tension and state of concern among students, so maybe only a deep study, as a result of close reading, cannot eliminate student tension, and other variables should be considered to achieve this goal. For example, Yasamani et al., (2018) showed that cognitive behavioral education based on mind-awareness can reduce the student's tension and exam anxiety.

Gharib Nawaz and Moghaddson (2018) concluded that reading strategies cannot alone reduce exam anxiety and other factors such as cognitive management strategies and students' beliefs about testing are effective in this field. According to the findings of this research, it is proposed that the teachers train students how to study correctly in order to increase students' motivation to develop good reading habits alongside the curriculum.

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