



Effectiveness of Cognitive and Metacognitive Strategies and SQ4R Methods in Reducing Test Anxiety In Students

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ABSTRACT

The present study Review the effectiveness of cognitive and metacognitive strategies and SQ4R Methods in reducing test anxiety, increase self-efficacy and academic achievement in high school students Rodhen city in Iran. The sample consisted of the population of 48 student's randomly selected sampling method and the way randomly in four groups of three experimental groups and one control group were. The measure was used: test Anxiety Inventory STAI-Y and self-efficacy Schwartz Scale. For analyzing the data, multivariate analyses of variance (MANOVA) were used. The results showed that Cognitive strategies and metacognitive strategies and their combination had a significant effect on students' test anxiety and Self-efficacy scores before and after training. Cognitive strategies, the SQ4R method approaches and their combination had a significant effect on students' test anxiety and Self-efficacy scores. According to the findings, it seems that the SQ4R method employed in academic achievement and reduces anxiety has been effective.

Keywords: Metacognitive strategies, SQ4R Method, Test anxiety

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INTRODUCTION

Anxiety as part of every human life, in all societies is regarded as an adaptive response. Anxiety in moderation and constructive we can make to conduct their affairs is more durable (Albano, Causey, & Carter, 2001). Anxiety as part of the lives of children and adolescents, one component of their personality structure represents Morbid anxiety and failure to remain on the source of reconciliation and a wide range of disorders, cognitive and physical adaptation includes (Andrews & Wilding, 2004). If we feel that we have ready at every stage of life or At that time we have a doubt in your ability to get emotional disorders. One of these areas is tested and evaluated. In reviewing the various common types of anxiety that affects 10 to 30 percent of student. Closely with the diagnosis of anxiety in social phobia has DSM_IR. Many studies on test anxiety as a trait anxiety has been Because the person has anxiety when subjected to tests of cognitive changes can be Burns (2004). This concept has two types of anxiety. One of the aspects that concern the cognitive concept and the idea is misplaced In fact, the person informed about

the function and the other is the emotional which is characterized by physical symptoms and stress. Such as increased heart rate. Most students claim that when you are suffering from stress, excitement and frustration ,and prevalence of anxiety is different in the two sexes, many factors such as age, gender, parental and community expectations are associated with anxiety also, test anxiety is related to students with character and self-efficacy and academic achievement. The negative assessment of its total core. Swanson and Jerman (2007) considers that his employment with the kind of anxiety and (Vos & De Graaff, 2004) doubt in your ability is determined by minimization a significant inverse relationship between the expected test scores and there is anxiety. Nowadays, many methods and strategies such as cognitive and metacognitive strategies for improving learning and retention of learners, researchers and educational psychologists are provided and tested. Cognitive strategies, action will facilitate learning while metacognitive strategies, monitor learning creates, makes the learner in their learning process and it took under its control. The kind of

self-regulation, or learning to occur and where the learning set, has become one of the important concepts and learning areas. Metacognitive strategies, knowledge or cognitive process that assessment, Check or contribute to cognitive control and cognitive function adjusts (Vos & De Graaff, 2004). Most theorists of "cognitive knowledge" as the information that people in the know about the factors associated with homework and learning strategies, and "cognitive set" to a variety of administrative actions, such as attention, reviewing, planning and identification of errors at the point and the impact of cognitive activities, or their differences, metacognitive beliefs prominent role in guiding behavior (Brown, 2000). These beliefs and test anxiety, stress, worry, physical symptoms associated with anxiety thinking unrelated to try and try relationship. People who have low cognitive anxiety than damage showed that metacognition and test anxiety is a significant relationship with achievement (Pifarré & Cobos, 2009). Thiede, beliefs impaired in patients with anxiety were reported. Also the relationships between test anxiety and meta-memory have reported Jennifer separate research the impact of beliefs on academic achievement and student learning have shown. That cognitive skills training on academic achievement and student learning has a positive impact. Research shows that there is a negative correlation between test anxiety and academic success (Thiede, Anderson, & Therriault, 2003). Researchers on defects and flaws in study skills examination skills in students with test anxiety and stress. According to this model, the main cause of anxiety impair performance of these students do not study skills and skills they are weak. Color also found that students with test anxiety, are more appropriate study skill Pifarré and Cobos (2009). Meet and maintain standards of performance, efficiency and raises the sense of failing to meet them and keep it low. People who feel that they are helpless feeling low efficiency and cannot control events in their lives, they believe that any efforts are in vain. When they are faced with obstacles they encounter a problem if the initial attempt is fruitless, they despaired. Research supports the fact that learning is not merely the effect of cognitive and metacognitive processes in learning topics, issues such as relationships, strategies and effective rules and learning in further efforts to improve and usually bilingual closely with, accumulation and recovery and other

words associated with organization. Password organized during handling, later retrieval to improve. Obviously, if appropriate organization of information, we can retrieve large volumes of data, it is obvious that providing such circumstances, the changes we have witnessed in other ways academic achievement, self-efficacy and test anxiety expect (Baldwin, 2002). One of the most popular memory improvement techniques, is "SQ4R". This method name made by six initials related to learning and memory organized as a pre-reading, question, read, think, memorize and review saying "SQ4R" (Higgins, 2000).

The research question here is to consider, Does teaching and learning strategies and study is ways to reduce test anxiety and self-efficacy and academic achievement conclusion being?

METHOD

This is a quasi-experimental study with a pretest/post-test experimental and control group. The data were analyzed through covariance analysis. All participating students included in the present study with parental consent were in their high school in the field of mathematical physics, and experimental science was enrolled in the second semester of the academic in SAMA School Rodhen. The population included of 48 students' randomly selected sampling method and the way randomly in four groups of three experimental groups and one control group were. Research tools was two tools: test Anxiety Inventory STAI-Y 0.79 to 0.84 percent reliability and credibility of the experts is 0.81 percent (Burns, 2004) and self-efficacy Schwartz Scale 0.80 reliability and validity were less than 0.7 the norm. Brown and Guttman, 0.81 come. In order to measure the achievement of academic achievement scores on teacher-made tests (Higgins, 2000).

FINDINGS

A breakdown of the pre-test and post-test as can be seen in Table 1, from pre-test to post-test scores of students have changed. To make this difference was statistically compared with the Levine test of homogeneity of variances in Table 2 examines the notion.

Table 1. Distribution of subjects score frequency in variables, is a separation of pre- and post-test

		N	MD		SD	
			pre-test	post-test	pre-test	post-test
Test anxiety	SQ4R	12	78.250	69.250	18.602	22.991
	Cognitive strategies	12	73.500	77.166	13.187	15.514
	Combination Method	12	80.917	88.666	17.926	14.724
	control	12	73.667	81.666	13.269	23.0704
	total	48	76.583	79.187	15.754	20.152
Self-efficacy	SQ4R	12	30	35.545	4.452	4.803
	Cognitive strategies	12	29.250	29.583	3.745	3.579
	Combination Method	12	31.833	33.583	7.685	14.406
	control	12	30.250	29.416	6.384	7.292
	total	48	30.333	31.957	5.673	8.795

Academic Achievement	SQ4R	12	15.833	17.055	2.6400	1.8738
	Cognitive strategies	12	14.666	16.300	3.7132	1.1769
	Combination Method	12	13.417	18.461	5.3505	1.0257
	control	12	13.458	14.856	5.72657	2.8424
	total	48	14.344	16.668	4.4996	2.23956

According to Table 2, result showed a significant level of homogeneity of variances ($P > 0.05$). Thus equality of error variances was assumption.

Table 2-Homogeneity of variances

Dependent variable	Levine test			
	F	df1	df2	Sig.
Post anxiety	0.571	3	44	0.637
Post self-efficacy	1.671	3	43	0.187
Post achievement	2.694	3	44	0.058

According to the data of Table 3, the interaction between the participants in the pre-test variable and independent variable (group) is not significant, so the data supported from the assumption of homogeneity of regression slopes. By virtue of the confirmation of the assumptions required for MANCOVA the results of this test are given in Table 4.

Table 3. Test of between groups homogeneity of regression slopes

Dependent variable	Source	Type III Sum of Squares	Std. Dev	Mean Square	F	Sig.	ETA
Anxiety	Default Model	11496.131a	7	1642.304	8.654	0.000	0.602
	Cut	218.492	1	218.492	1.151	0.290	0.028
	Group	1071.461	3	357.154	1.882	0.148	0.124
	Per- anxiety	8038.675	1	8038.675	42.358	0.000	0.514
	Group Per- anxiety	730.730	3	243.577	1.283	0.293	0.088
Self-Efficacy	Default Model	1189.416a	7	169.917	2.798	0.018	0.334
	Cut	115.704	1	115.704	1.905	0.175	0.047
	Group	70.923	3	23.641	0.389	0.761	0.029
	Per- self-efficacy	572.904	1	572.904	9.434	0.004	0.195
	Group Per- self-efficacy	41.763	3	13.921	0.229	0.875	0.017
Group Achievement	Default Model	162.072a	7	23.153	12.573	0.000	0.688
	Cut	394.726	1	394.726	214.354	0.000	0.843
	Group	38.848	3	12.949	7.032	0.001	0.345
	Per-permanence	56.976	1	56.976	30.941	0.000	0.436
	Group Achievement	11.851	3	3.950	2.145	0.110	0.139

The results of multivariate analysis of covariance (MANCOVA) by controlling the pre-test and post-test analysis of test anxiety in the experimental and control groups, indicating that the subjects in the experimental and control groups, there are significant differences. Cognitive strategies, approaches the end of the story, and their combination had a significant effect on students' test anxiety. ($p = 0.015$, $F = 3.879$).

Table 4, MANCOVA test results, for show academic achievement, anxiety and self-efficacy changes.

Dependent variable	Source	Sum of Squares	Std. Dev	Mean Square	F	Sig.	ETA	R Square	Adjusted R Square
Anxiety	Default Model	10765.401	4	2691.350	13.906	0.001	0.564	0.564	0.523
	Cut	306.277	1	306.277	1.583	0.215	0.035		
	Per- anxiety`	8379.339	1	8379.339	43.297	0.001	0.502		
	Group	2251.857	3	750.619	3.879	0.015	0.213		
Self-Efficacy	Default Model	1147.653	4	286.913	5	0.002	0.323	0.323	0.258
	Cut	132.593	1	132.593	2.310	0.136	0.052		
	Per- self-efficacy	829.216	1	829.216	14.449	0.001	0.256		
	Group	273.657	3	91.219	1.590	0.206	0.102		

Academic Achievement	Default Model	150.221	4	37.555	18.885	0.001	0.637	0.637	0.604
	Cut	650.376	1	650.376	327.051	0.001	0.884		
	Per-Permanent	68.796	1	68.796	34.595	0.001	0.446		
	Group	82.325	3	27.442	13.799	0.001	0.491		

Self-efficacy scores before and after training, cognitive strategies, approaches the end of the story, and their combination, showed that subjects in the experimental and control groups, there are significant differences. Cognitive strategies, approaches the end of the story, and their combination had a significant effect on students' self-efficacy ($p=0.206$, $F=1.59$). Test anxiety scores before and after training, cognitive strategies, approaches the end of the story, and combine them, indicates that the test group and control subjects, there is a significant difference in cognitive strategies, SQ4R method, and then top it all off, a significant effect on academic achievement students ($p = 0.001$, $F=13.799$). According to the content of Table 4, it can be concluded that in general the SQ4R method used in academic achievement and anxiety have been effective. The adjusted mean treatment group shows the way after conclusion the greatest impact on reducing anxiety and the combination has created the most progress in academic scores.

DISCUSSION

Data analysis showed that the SQ4R method employed in academic achievement and reduce anxiety has been effective. Average adjusted after the conclusion of the experimental group showed that the greatest impact in reducing anxiety and the combination has created the most progress in academic scores.

CONCLUSION

One of the problems facing children with learning disabilities, working memory is a defect in the meta-cognitive and meta-cognitive and executive functions of working memory are two components of the social and academic readiness of children for school, studies are particularly important, have shown that interval training to improve short-term memory, is very effective. One of the most important developments in the second half of the twentieth century, along with the role of memory in learning math, theories that the meta-cognition, have emphasized. This distinction, implies that cognitive behavior can be achieved through learning and one of the results of educational activities and be clever. Metacognition or the ability to control the cognitive processes (self-regulation) is tied with intelligence. Research, the relationship between metacognitive knowledge with academic success, has proven. According to the meta-knowledge for learning and academic success as well as personal and social growth of students, it is necessary to identify factors contributing to the enhancement of this knowledge will be important as well (Aluja-Fabregat & Blanch, 2004). Results showed that the method is effective after the conclusion of the academic achievement of students. According to the results of a study, 70% of adult learning is self-directed learning. Self-directed learning is a process in which the learners' responsibility for planning, implementing

and evaluating their own learning and are expected to be independent in order to achieve predetermined learning objectives and work. Pennington and Bishop (2009) showed that the correct strategies, high school students, the learning and learning transfer in them increases.

Rodger, Murray, and Cummings (2007) showed that test anxiety, constant negative relationship with their performance, but the results of the examination of emotional anxiety, the less stability. Anxiety, debilitating effect on academic achievement, and this because of its degrading thoughts. These thoughts, issues intended to prevent the person from thinking and motivates him to thoughts unrelated to think in school, learning and knowledge preservation and retrieval, not only directly with grades and academic achievement but also with many components related to personality development is relevant. Vos and De Graaff (2004) Learning, relatively permanent changes in behavior as a result of exercise potentially occur (Atkinson, Regan, & Williams, 2006). Nowadays, many methods and strategies such as cognitive and metacognitive strategies for improving learning and retention of learning is presented. One of the most popular techniques to improve memory, pre-reading, question, read, think, say and review the method of preservation is so famous conclusion. Learning is one of the main sources of environmental compatibility. Students efficacy, than others of your abilities, your knowledge and less compared to others according to their standards and capabilities to deal with learning problems. Is seen in terms of ability and talent students who are learning the same level, academic performance when you try and learn to try different show. One of the reasons for the failure of students to try different, much anxiety has been identified. And better people to deal effectively with stress, need training so that they can increase their self-efficacy (Kosnin, 2007). The efficacy people cope with life crises and stress caused by them as a measure to cope with problems and stressful situations can be considered (Eilers & Pinkley, 2006).

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LIMITATION: 1-Limitations in the generalizability of the results due to limited research community. 2-Due to sampling limitations of the study was conducted only on males .

SUGGESTIO: 1-It is recommended that this research be carried out on girls To examine gender differences in training methods. 2- Due to the combination of anxiety and a greater impact on student achievement is recommended at large Train.

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