Investigation of Relationship between Metacognitive Training and Motivational Self-Regulation

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Abstract
This research has done with purpose of Investigation the Relationship between Metacognitive Training and Motivational Self-Regulation in Students of Smart Girls Schools in Kermanshah city. Research method was a semi-experimental research with experimental and control groups as pre-test and post-test. Results and analysis of covariance by software spss 18 was analyzed. The results of univariate covariance showed that the effect of intervention on educational motivation index on the index were significant (p =0.001) and Eta – square was at 0.406. The univariate analysis of covariance context, Mancova on mean areas motivational strategies showed that Metacognitive Training has a significant impact on the scale and motivational strategies. Based on the results of research on teaching and learning is a learning strategies and Education strategies to promote self-regulation is effective, the promotion of self-regulation and enhance students' use of Metacognitive strategies.

Keywords: Metacognitive Training, motivational self-regulation, motivational strategies, Smart schools

Introduction
Due to the increasing speed and volume and growth of science, education and even time cannot provide education for learners. Today, with the advent of smart schools and e-learning, the use of computers in education with previous notions of transformation is serious, modern approach believes that knowledge requires learning environment and motivates students and the duty of the teacher to design and create a learning environment. The framework of interactions in computer-assisted learning environment and expectations of a student is successful in this environment, self-regulation as an important characteristic of a successful student is doubled (Shahamat, Kadivar and Farzad 2007). In response to the current changes is the best way to equip students with skills that they can use it, to understand new issues and, in fact, learning how to learn. With this method, a tool to learn, to know, they do. To choose methods or strategies can used Metacognitive strategies such as repetition and practice, develop, organize and control and these methods when learning to choose the best method and choice over their learning accuracy increased speed and monitoring and evaluation. According to studies by different methods of learning and thinking or Metacognitive strategies that can be taught these strategies means that teachers can either independently or in conjunction with other courses to learn the skills to teach their students and even students. After Education, students can voluntarily use these strategies, and this has a positive impact on learning and progress, instead of leaving them (Seif al, 3861). And most positive impact on learning strategies confirmed and the study seeks to identify the path to self-regulation is that education strategies for students is paved and to create such learning can strengthen and motivate them is provided according to need. In which an individual towards his goal of earning and learning activities is planned. Appropriate to the circumstances, management strategies, monitoring and evaluation is necessary, and, if necessary, from other sources, such as: or take advantage of opportunities to advance his plans well centered and this approach is based on the student's learning and his features and focuses on student-centered.
Research Problem

In the current educational system teachers emphasize that only what is train must be learned. With the addition of this educational system of education, volume of texts, Education and evaluation procedures and scoring involved, learn deep integration and creation, but will also encourage students to pay more attention to the consequences of performance, particularly dead, will lead (Darvishi Mohammadi et al., 2013). With a staggering growth rate and increased human knowledge and limited formal Education time which prevented it from fulfilling the Education needs of learners it has been considered more. If we can design new educational systems all educational activities based on the needs of our learners and the self-perception by the people based on improve their Metacognitive skills caused. The problems is solved in the way of knowledge, and they are not upset and even themselves feel will overcome the challenges created (motivational self-regulatory). They change strategies the utmost attention has to be self-reinforcing problem (Aimes, 1994, pp. 142-159). According to Nokhoststin Goldost, Moeeni Kia (2009). In this style of Education is essential students will be able to control their own learning and self-regulation of their Education programs and take responsibility for their own learning, and the use of self-regulation skills, by coordinating Metacognitive skills, to strengthen the motivation and the motivation of their school and activities and his quest to learn how to focus on independent learning and other words. In this way exhibit its independence in learning. It is based on self-regulated learning, in response to the question of how learners are fluent in their own learning processes, have been proposed (Zimmerman, 1989) Zimmerman (1988), quoting Talebzadeh Nobarian et al (2011). Schunk (2008) quoted Nickell et al (2012) also believe that self-regulation refers to the use of strategies and processes that enable and sustain the thinking, knowledge, thoughts and behaviors in order to achieve the objectives. In other words, self-regulation is taking responsibility for individual learning by itself via coordinate the Metacognitive skills develop these skills, motivation of learners and thus increase student motivation. IT integration in education increases self-regulated learning. This is due to the design of innovative educational systems educational activities are designed based on the needs of learners, so students can regulate their own learning activities with the lowest teachers help.

Research Purpose

Main Purpose
- To Investigate the Relationship between Metacognitive Training and Motivational Self-Regulation in Students of Smart Girls Schools

Minor Purpose
- To Identify the Relationship between Metacognitive Training and Motivational Self-Regulation (Valuation) in Students of Smart Girls Schools
- To Identify the Relationship between Metacognitive Training and Motivational Self-Regulation (Emotional) in Students of Smart Girls Schools
- To Identify the Relationship between Metacognitive Training and Motivational Self-Regulation (Expectation) in Students of Smart Girls Schools

Research Background

In general, self-regulated learning is an important issue for human learning and educational psychology on learning active participation in the learning process rather than passive learning experience stress (Ao man chi 2006) according to Hafezi, et al. (2011). Several studies show that students with skills in self-regulation (Metacognitive strategies), their learning experiences and actively conduct various ways altogether. They appeared to favor good governance strategies and, whenever necessary, use learning strategies in response to their requirements, characteristics and circumstances change task Butler and Weiner (1995) quoted Hafizi, Eftekhari, Seydenezhad (2011). Chunk (2009) quoted Aqmarrani et al. (2010) during the academic performance of students and research investigate the relationship between Metacognitive style, motivation and self-regulatory codes, guide them and show that the components of the self-regulatory learning strategies and academic performance are correlated. The findings also show that many people who can aspects of Metacognitive, motivational and behavioral self-regulation performance, and high successful learners. These findings suggest that self-regulation is a predictor of academic performance. Learners achieve academic success, must learn how to regulate their function and aims to set up the sadness of difficulty of texts. Khosravi et al. (2011) in his study entitled investigate the relationship between innovation, self-regulation Metacognitive
learning strategies with academic performance results indicate that the use of self-regulation strategies and methods to increase the creativity of the students, their academic achievement increased thus, by teaching self-regulation learning strategies and providing favorable conditions for their growth, self-efficiency and innovation can help to improve students’ progress. Baezat, Izadi Fard (2010) in his study entitled the effectiveness of self-regulation strategies to reduce spelling errors students with dysgraphia results of this study showed significant effectiveness of self-regulation strategies on reducing spelling errors are the result could be students with dysgraphia learning disorders, educators and counselors and psychologists suggested that the use of self-regulation strategies improve writing performance of students with dysgraphia. Barzegar Befrouee, Saee Pour, (2012) in his research entitled modeling the relationship between epistemological beliefs, self-education, self-regulation and deep processing of academic performance of high school students found that students’ epistemological beliefs can improve efficacy, strategies of self-regulation and consequently improve their educational performance. Soleiman Nejad et al (2012) examine the impact of self-regulation and interactive learning strategies and Metacognitive styles of the students solve mathematical problems solving math students found that the performance of education increases self-regulation strategies. Tajri, Karshki, Abdkhodaei, (2011) in his research under the student’s self-regulation direction in the Mashad city: nature of homework and gender. The results showed there are a positive and significant relationship between achievement goals and self-regulation and in this research proves that education causes technology to help and the students learn self-regulation are high, because students do most of their work and actively seek information and new sources of active student engagement activities with issue one of the important approaches in stable learning it is desirable to take into account technological and Education self-regulation skills in computer-based learning, an important factor affecting the level of interaction with the learning environment solidarity regulatory and academic achievement, represents a significant and positive relationship between two structure in smart and non-smart schools. Facilities any time, personalization and diversity of information about the environment allows learners to study when and how to set things right; to choose from a variety of sources and constantly have control over their learning process and it will continue to evaluate opportunities as well as information, personal communication environment, learning in situations that can evaluate information sources, review and consideration of multiple perspectives varied opinions, logical and critical thinking to increase as education, virtual learning environment using features of a learning culture gradually towards independent learning skills, spontaneity, self-direction and self-navigation leads teachers implemented the curriculum in various ways combined with the possibilities of the virtual environment, can be four steps to determine its role, functions and types of activities and assignments learner, learner-centered learning culture directed towards the information society to the needs of citizens.

Research Methodology
This study is semi-experimental using pre-test and post-test design with a control group.

Statistical Population
The Statistical Population in this research is included all girl students’ third grade high school in District 3 Kermanshah studying in those smart schools. District 3 Kermanshah has a high school advice to students, boys and girls, and in terms of geographical distribution among the three largest areas of its distribution.

Sample and sampling method
In this study, simple random sampling method is used. That is the smart schools randomly selected schools and between the schools, two classes were randomly selected. Finally, all the students in the sample were each class as a whole number. The sum of these two classes was 59 girls in the two groups (29 samples) and control group (30 samples).

The findings of this Research:
Table 1 suggests that the homogeneity tests slope of the scale of valuation, the expected emotional after all sub scales test is given. In all cases there is no significant relationship, so assuming the slope of the pre-test is not required. To compare the experimental and control groups in terms of three sub scales of learning motivational strategy (self-regulation) multivariate analysis of covariance was used, the results showed that the tests at P <0.002 are significant and this means that at least one of the dimensions there is significant difference between the experimental and control groups.
Table 1. Results of univariate analysis of covariance on post-test means learning motivational strategy index (self-regulation) in the experimental group and control group pre-test

<table>
<thead>
<tr>
<th>Source</th>
<th>Total squares</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>Level of significance</th>
<th>Eta-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test Group</td>
<td>1077.677</td>
<td>1</td>
<td>1077.677</td>
<td>0.554</td>
<td>0.460</td>
<td>0.010</td>
</tr>
<tr>
<td>Error</td>
<td>106962.218</td>
<td>55</td>
<td>1944.768</td>
<td>13.675</td>
<td>0.001</td>
<td>0.199</td>
</tr>
</tbody>
</table>

R squared= 0.215 adj R squared=0.187

Table 2 merely states that in one of the areas between the experimental and control groups there is no significant difference to determine in which areas multivariate analysis of covariance was used that showed Mancova in all three sub scales were significantly different. The results showed that in sub scales of valuation (F=13.252), Expectation (F=7.60), Emotional (F=10.471) there is significant difference between the experimental and control groups. It means that Metacognitive Training has significant effect on dimension of sub scales of learning motivational strategy (self-regulation). Also investigation of Eta – square shows that Metacognitive Training has the most effect respectively on valuation (0.200), Emotional (0.165), Expectation (0.125). (table 2)

Table 2. Univariate analysis of covariance in the Mancova on mean of areas in learning Motivational strategy (Self-Regulation)

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Total squares</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>level of significance</th>
<th>Eta-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post –test Valuation</td>
<td>5509.105</td>
<td>1</td>
<td>5509.105</td>
<td>13.252</td>
<td>0.001</td>
<td>0.200</td>
</tr>
<tr>
<td>Post –test Expectation</td>
<td>2468.625</td>
<td>1</td>
<td>2468.625</td>
<td>7.60</td>
<td>0.008</td>
<td>0.125</td>
</tr>
<tr>
<td>Post –test Emotional</td>
<td>492.237</td>
<td>1</td>
<td>492.237</td>
<td>10.471</td>
<td>0.002</td>
<td>0.165</td>
</tr>
</tbody>
</table>

Research Conclusion

According to the main and minor Purposes of this study include:

Main Purpose
- To Investigate the Relationship between Metacognitive Training and Motivational Self-Regulation in Students of Smart Girls Schools

Minor Purpose
- To Identify the Relationship between Metacognitive Training and Motivational Self-Regulation (Valuation) in Students of Smart Girls Schools
- To Identify the Relationship between Metacognitive Training and Motivational Self-Regulation (Emotional) in Students of Smart Girls Schools
- To Identify the Relationship between Metacognitive Training and Motivational Self-Regulation (Expectation) in Students of Smart Girls Schools

In response to three questions were mentioned is due to the very close overlap in their impact on self-regulation motivational teaching Metacognitive strategies, to determine the role of dimension of Metacognitive Strategies on dimension of Self-Regulation have been studied separately, which are as follows: For responding to the first question regarding to identify the effect of Metacognitive Training on Motivational Self-Regulation (Valuation) in Students of Smart Girls Schools. The mean (standard deviation) scores in the experimental group and the control group in sub-indicators of motivational strategies (self-regulation) are given. Total score of motivational strategies in the experimental group is equal (pre- test) 87.96 with standard deviation 23.02 that this score in post-test of experimental group is equal 168.64 with
standard deviation 41.94. To identify the role and effectiveness of self-regulation of motivational intervention on the first multivariate analysis of covariance was used that the results showed Mancova in sub-scale of valuation is equal (F=13.252), and there is significant difference between the experimental and control groups. It means that, Metacognitive Training on dimensions of learning motivational strategy (self-regulation) has a significant impact and the univariate analysis of covariance was used. The results showed that F is equal (13.675) in this testing for groups that is significant in level of p<0.001. It means that between experimental group and control group, there is significant difference for a total indicator of motivational strategies (self-regulation). And the results showed that answered the valuation up to F= (0.200) is a significant difference between the experimental and control groups. Note that self-regulation experts in the field of learning believed students who are assigned the role of purpose in their learning performance are more favorable. These individuals are follower, thoughtful and efficient learners who create positive attitudes towards their learning processes. Since the values, goals, beliefs about the importance of students having interest in in other words, the argument for doing homework and students are concerned. The results showed the use of motivational self-regulation strategies and the significant difference between test and control components of the valuation report, and this means that the trained group compared with the control group after eight sessions, internal rate showed a more positive and stronger and more efficient your thought and acted in terms of more Metacognitive self-regulation. 2- For responding to the second question regarding to identify the effect of Metacognitive Training on Motivational Self-Regulation (Emotional) in Students of Smart Girls Schools. The mean (standard deviation) scores in the experimental group and the control group in sub-indicators of motivational strategies (self-regulation) are given. Total score of motivational strategies in the experimental group is equal (pre-test) 87.96 with standard deviation 23.02 that this score in post-test of experimental group is equal 168.64 with standard deviation 41.94. To identify the role and effectiveness of intervention on indicator score of motivational self-regulation, the first multivariate analysis of covariance was used that the results showed that Mancova in sub-scale of emotional is equal (F=13.252), and there is significant difference between two groups of experimental and control. It means that, Metacognitive Training on dimensions of learning motivational strategy (self-regulation) has a significant impact and then, univariate analysis of covariance was used. The results showed that F is equal (13.675) in this testing for groups that is significant in level of p<0.001. It means that between experimental group and control group, there is significant difference for a total indicator of motivational strategies (self-regulation). And these results showed that in sub-scale of Expectation up to F= (0.165) is a significant difference between the experimental and control groups. Also investigation of Eta – square shows that Metacognitive Training in Expectation scale has been effective after the emotional scale.
References