



The relationship between metacognitive awareness and self-regulation with Contemplating Contemplation and mediated learning approach the high school students in Qom

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Abstract: The aim of this study was to investigate the relationship between metacognitive awareness and self-regulation Mediation reflective thinking and learning at high school students in the city of Qom. The study population consisted of all high school students in Qom is the number of 15107 patients (8016 males and 7091 females). Of this community of farmers and Morgan table 375 as the sample was stratified random sampling. The purpose of this methodology with regard to the relationship between metacognitive awareness and self-regulation Mediation reflective thinking and learning, is applicable. The field data collection and the method of execution were descriptive and correlational. For data collection, a standard questionnaire teaching (LPQ) Biggs et al (2011), "Metacognitive awareness (MAI) Schraw and Denison (2004), Self-regulated learning strategies MSLQ (1999) Pintrich and De Groot (2009) and reflective thinking RTS Mezirow and Kember questionnaire (2011), respectively. Using SPSS software and using descriptive statistics and inferential statistics (Pearson correlation, multiple regression model and path analysis), data were analyzed the results showed that the hypothesis of this study, the relationship between the variables of cognitive knowledge of reflective thinking positive and meaningful. Among the aspects of self-regulation (valuation, will and emotions) and a significant positive relationship with their reflective thinking; the hypothesis (first, second, third, fourth and fifth) were confirmed. But cognitive and metacognitive strategies and resource management and significant negative relationship with reflective thinking. Between metacognitive awareness and self-regulated learning approach because of the high correlation obtained there is a significant positive relationship. So between all dimensions of cognitive and self-learning with high school a student in Qom there is a significant positive relationship.

Keywords: meta-awareness, self-regulation, reflective thinking, mediated learning

1. Introduction

In the present era of education an important part of every person's life. In addition, the quality and quantity of education plays an important role in the future. For this reason, nearly a century, psychologists widely in an effort to identify predictors of "learning in students" are. (Ahmadi, 2014, 22)

One of the most important learning and academic achievement among students, their learning approach. The majority of educational psychologists and experts in learning how to deal with things students have learning approach. Background investigation approaches of learning and study refers to two types of approaches, including the deep and superficial approach. Deep approach to understand the actual materials used and makes learning meaningful and long-term. In contrast, superficial approach to memorization by rote learning strategy deals and does not lead to the meaning of the content. Some students are more successful than others in learning science as a meaningful difference to them or rote learning is concerned. (Garavalia, 2011, 45)

The consequences that occur after learning its results. In addition, the quality of learning outcomes achieved by the quality of the learning activities. Studies in this regard have shown that the deep approach

and learning outcomes (achievement) positive and significant correlation between surface approach and achievement of significant correlation was negative. Some studies, another approach to strategic or development are cited. Details of competitive incentives, needs assessment, and apply maximum effort has been organized approach for achieving the highest scores. But the latest revision of approaches to learning and study conducted to evaluate the factor analysis, the structure of both the deep and superficial approach has been confirmed. In this review, a number of studies show that most students approach learning, deep learning approach. (Biggs et al., 2011, 135)

One of the determining factors in student learning, metacognitive knowledge. A meta-cognition, consciousness of cognitive processes and regulates their recognition. The accumulation of a large volume of information mind is not comprehensive in terms of scientific validity, but what is important is a process of awareness, control and monitoring of learners to acquire knowledge and learning is on your mind that this is in the field of metacognition. Slavin (2009) argues that learners because they do not know how to use their metacognitive skills, It can be argued that many of the problems rooted in their training curricula should be lower.

Research Wang (2009), (quoting from Marzouki, 2011, 56) that "the program", "learning strategies" and "monitor the effectiveness of the strategies used by" a significant impact on the learning process. Their learning problems of students due to lack of metacognitive knowledge they know. Some education professionals, successful learning in the form of meta-defined access to knowledge And believe that metacognitive awareness leads to learners in the learning rather than relying on teachers to be more self-sufficient (Lavassani et al., 2010, 61)

Metacognition two components of "metacognition" and "cognitive control" are included. (Schraw and Denison, 2004)

Another factor that affects student learning approach "reflective thinking" is As a factor that can affect an individual in the study. The Dweck (2012) Reflective thinking involves "active review, or any assumption of constant and careful attention to the reasons why it believes confirmed This idea tends to make them more results "Camber and colleagues (2011), a practical framework, important, well-founded and developed the concept for the evaluation of this concept. He separated the contemplative activity of speculative activity. In his view, any awareness of thoughts and feelings, not reflection. He separated the two types of activity, "without hesitation", which is a normal practice, such as typing and driving and thoughtful action that includes a selective review of previous learning and assessment of its intention to include.

He considered the following four sets of reflective thinking "normal practice" that an automatic and permanent activity And with a little consciousness occurs, "to understand" where a person makes use of existing knowledge As far as knowledge of psychology during mastic and meaningful perspectives shaped And creativity in there thinking, "reflection", which is the continuous care and attention with which it comes in about every opinion And searching for the best views and the "critical reflection" as a higher level of reflective thinking, including awareness of these issues because we understand the issues And in what way we feel and act. (Camber, 2011, 324)

Another meta-cognitive variables that have high affinity for reflective thinking can be influenced in this way, improve, self-regulated learning skills of students. Self-regulation, important implications in the learning process, learning and life success and one of important topics in contemporary education. The main framework of self-regulated learning theory on the belief that individuals make in terms of beliefs, motivation and behavior, learning to organize. Self-regulated learning means individual capacity to modify their behavior and changes in the external environment and internal conditions and the ability to organize and manage their behavior in order to achieve various objectives of learning. (Lavassani, 2010, 72) According to the regulation of Pintrich and De Groot (2009) valuation, expectations, emotional, cognitive and metacognitive strategies and strategies to manage resources.

Far reflective thinking on future regulation may affect students while growth may be accelerated by different strategies of self-regulation. (AYAZGÖK, 2014, 3)

Development of intellectual skills of students in education has always been an important issue; however, experts in education, the inability of students have expressed concern reflective thinking. Different cognitive strategies for effective self-regulation, the reflective thinking as a part of this process emphasized and may assist learners in making mental abilities to impact the performance of the students, reflective thinking as an important skill for self-learning and lifelong learning is considered.

Especially in schools due to the expansion and deepening of knowledge, develop students' ability to lead and adjust their learning an experience on the path to success is crucial. Self-regulated learning basic principle is that when your students are responsible for learning, to learn more effectively. (Sadeghi, 2011, 45)

A review of past research can be said, rather than the research that examines the relationship between metacognitive awareness and self-regulation Reflective thinking mediated learning approach, students are presented together Or a tool to identify the effects of metacognitive knowledge on students' self-reflection and thinking they are empty. The aim of this study was to investigate the relationship between metacognitive knowledge and self-reflective thinking mediated learning approach high school students in Qom. In line with previous studies and taking into account some factors that influence student learning indicators In this study, the factors associated with learning, relationship between metacognitive awareness and self-reflective thought students were investigated.

One of the most important developments in the second half of the twentieth century, theories that emphasize the role of excellent process control and guidance affecting cognitive processes are emphasized. The higher processes "metacognition" called. In attention to the importance of meta-cognitive and meta-cognitive skills training to students, educational psychologists for decades, especially learning strategies students have confirmed, The most important issue in Educational Psychology, Cognitive Psychology, emphasis on learning "how to learn" (learning) process as one of the goals of learning and teaching. The subjects familiar to the minds of more and more connected to life and person have previous information; information processing becomes easier (Kashefi, 2011, 41)

The primary aim of cognitive training, self-control and self-learning to be independent learners, students Cognitive processes and learning in order to achieve their own goals to guide, monitor and correct Metacognitive strategies, cognitive strategies to control and to answer them. So it is necessary for success in learning with the use of cognitive and metacognitive strategies (Ababaf, 2009, 7)

The objectives of the education process of students is important, they become strategic learners and capable of self-regulation in learning. Such students are usually involved in the learning process and assume responsibility for their own learning. They are able to use cognitive strategies, self-directed learning and control and to achieve further progress in learning. So, what system of education, including the educational system of our country must be considered, Development and implementation of this new strategy as a student-centered approach in the learning process of students. Self-learning, a concept which focuses on the role of the individual in the learning process. Self-regulated learning basic principle is that when your students are responsible for their own learning, to learn more effectively. (Durance, 2011, 115)

Academic achievement and its risk factors have been considered by education professionals, and many studies have been allocated. In recent years, researchers have sought to identify variables that help them to improve teaching and student learning and thus improve academic performance. In this regard, one of the variables that must be taught to learners in the educational system, Thinking skills Thus, the mid-twentieth century, thought meditation was on the agenda of educational theorists and practitioners of this style of thinking was mixed with the curriculum. (King, 2012, 667)

The importance of reflective thinking in the field of education as well as science and art that deals with the human experience, it is quite clear. This kind of thinking, an important aspect of professional practice in schools and educational organizations considered and in education, is considered essential for students. So that education is the most important effort of reflective thinking they know need to be done in schools. (Ibid, 670)

To determine students' strengths and weaknesses and learning approaches, relevant authorities can, through appropriate educational interventions and programs to improve student success and provide accurate. Given the importance of metacognitive knowledge and self-reflective thought to mediate learning and the lack of systematic research in the universities, the importance of this research in Azad University of Saveh is determined.

So researchers are going to study whether the metacognitive awareness and self-reflective thinking mediated learning approach a relationship there? This article seeks to examine the following hypotheses:

- Between metacognitive knowledge and self-reflective thought to mediate learning in high schools in the city of Qom there.
- Between metacognition and reflective thinking in students there
- Between the cognitive control of reflective thinking in students there.
- Between the valuation of reflective thinking in students there.
- Between the expectation of reflective thinking in students there.

- Between emotion and reflective thinking in students there.
- Between cognitive and metacognitive strategies of reflective thinking in students there.
- Between Resource Management with reflective thinking in students there.
- Between Mediation meta-cognitive learning approaches the students there.
- Between the control-mediated cognitive learning approach the students there.
- Between the valuation of mediated learning in students there.
- Between the expected mediated learning approaches the students there.
- Between Mediation emotion and learning among the students there.
- Between cognitive and metacognitive strategies with the mediation of learning in students there.
- Between Resource Management mediated learning approaches the students there.

2. History of research

Ahmadi (2014) in a study titled "metacognitive awareness of reading strategies and learning styles and their relationship with intellectual reflection power" Concluded that cognitive foundations of learning are important. These two concepts can affect learning are essential. The term cognitive mental processes (of thought) noted that the information they receive through their senses in different ways are changed by a password, stored in memory and retrieved for future use of memory. But meta-cognitive process in which students from the learning (of knowledge), How to use the available data to achieve the goal (of procedures) and the ability to judge the cognitive task in a specific (conditional knowledge), to achieve the goals aware and during the operation and after completion of the operation, progress with intellectual reflection of their self-assessment.

Rezai and colleagues (2013) article entitled "Relationship of critical thinking, self-regulation strategies and achievement in nursing students of Islamic Azad University of Semnan" did. His research concluded that due to the importance of self-regulation and orientation of the targets in the processes of teaching and learning are essential Factors affecting their development, is considered. It seems that one of the structures associated with self-learning critical thinking and goal orientation of students. This study aimed to determine the relationship between critical thinking and self-regulation with different goals in nursing students of Islamic Azad University of Semnan was done. Based on the results of achievement and self-regulated learning there was a significant positive correlation. Between critical thinking and self-regulated learning (cognitive and metacognitive strategies and resource management) was a significant correlation with academic achievement goals. Three variables mastery goal orientation, performance, attitude and self-learning predictive component analysis of critical thinking in nursing students were involved.

Since critical thinking, one of the factors affecting cognitive processes, perhaps the high level of students' critical thinking and their use of deep processing strategies in their learning, improve goal orientation and self-regulation strategies more effectively in their Reduction. If objective, professional development and training of nurses that have the ability to control your goals and strategy must be the mission of the schools of nursing, teaching and promoting critical thinking to students and teachers on the use of traditional methods of teaching and nursing evaluation is based on measurements of their revised memories.

Soleimani and colleagues (2013) conducted a study entitled "The relationship between epistemological beliefs, metacognitive awareness and reflective thinking and academic achievement" did. This article aims to understand the relationship between epistemological beliefs, learning approaches and reflective thinking was conducted with academic achievement. The results showed that the simple knowledge (words) are superficial learning, students work on critical reflection method, provided knowledge on common action, contemplation and academic achievement, and understand the direct effect of reflection. Finally, the results indicate acceptable fit to the data model.

Kashefi and colleagues (2011) study to investigate the effect of self-regulated learning and metacognitive knowledge of nursing students were reflective thinking skills. They concluded in their study that fosters reflection and meta-cognitive thinking is the most important objectives in nursing education. To determine the effect of self-learning on students' metacognitive knowledge was designed and reflective thinking skills. The implementation of self-regulated learning strategy represents a significant positive relationship between reflective thinking skills in students. Despite a higher mean score of metacognitive knowledge, there was no significant relationship with self-regulated learning strategies.

AYAZGÖK (2014) wrote today one of the main objectives of the education system provided in people's thinking structures. Learners, with high confidence and a sense of responsibility to ensure that the work shall,

with activities or learning tasks are met. Or at least the feeling that they know how to get results, they collide with. They know, learning is an active process and they should accept some responsibility for it. To achieve this goal, the concepts of reflective thinking skills and cognitive knowledge is required. He concluded in his essay that metacognitive awareness components of reflective thinking (reflective thinking) and a significant positive correlation.

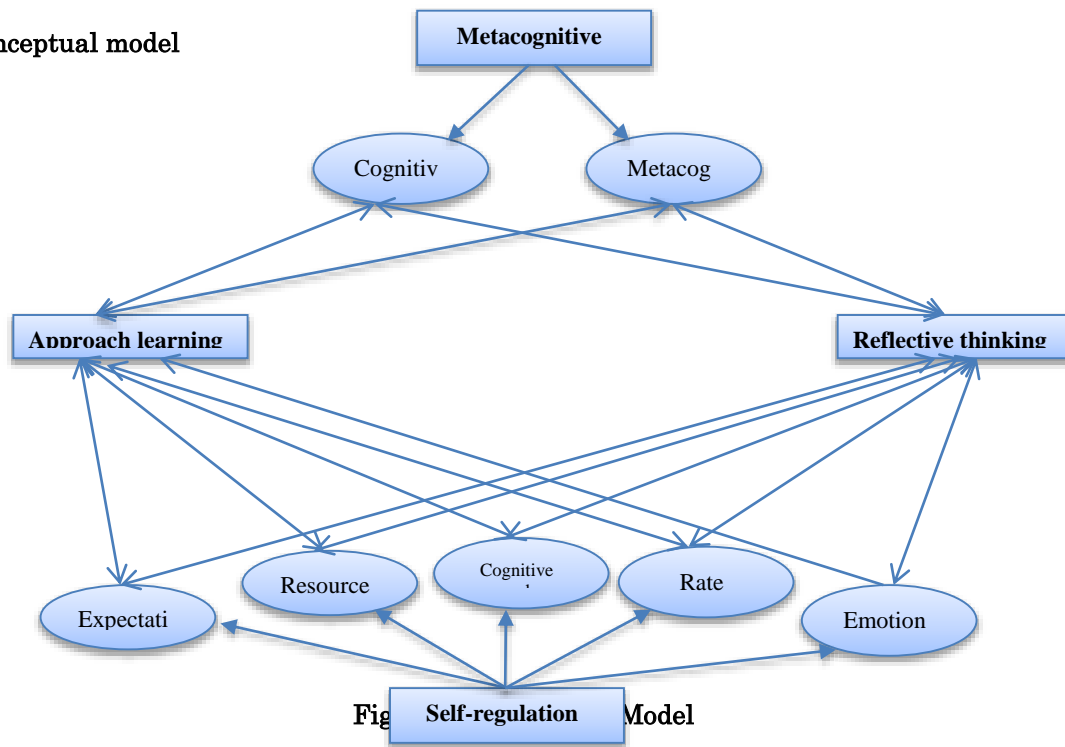
Research Kuiper et al (2012) suggest that the self-regulated learning and cognitive skills and reflective thinking, learning, there is a significant correlation. The overall result of this research indicate that students who are in the process of learning and study of cognitive skills such as planning, control and evaluation of benefits, significantly higher with reflective thinking and performance better show.

Research Philips and colleagues (2010) reflects the thinking of individual decisions to solve problems, make decisions on the operation and the results of the decision by knowledge expression, knowledge work and knowledge of metacognitive awareness condition is re-evaluated. He concluded that the problems and the potential role of cognitive theory and reflective teaching in a classroom environment, the education of computer design for users. The research project, which is about the use of meta-cognitive and reflective learning techniques developed for computer users to be able to learn to think meditation is a training program.

Brown (2010) concluded that: anything that makes a lot of research on metacognitive awareness by students to learn about the planning and problem solving, knowledge and thought processes used regulation, metacognition and cognitive control in consciousness is metacognitive.

Slavin (2009) in their study reached the conclusion that the first step to achieve self-regulated learning and, ultimately, progress in learning, teaching and improve student learning in the field of cognitive skills.

3. The conceptual model



4. Research Methodology

The purpose of this methodology with regard to the relationship between metacognitive awareness and self-reflection and mediation thinking approach to learning, is applied. The data collected and the way the field is descriptive and correlational. The study population consisted of all high school students to stay in Qom the numbers of 15107 patients (8016 males and 7091 females) are. The sample size in this study, according to Morgan, 375, was examined. Therefore, in this study, stratified sampling method was used. A sample of 140 female and 235 is male. To collect the data, a standard approach to learning (LPQ) Biggs et al

(2011), "Metacognitive awareness (MAI) Schraw and Denison (2004), Self-regulated learning strategies MSLQ Pintrich and De Groot (1999) and reflective thinking questionnaire RTS Mezirow and Kember questionnaire (2011) is used.

4-1- Standard questionnaires learning (LPQ) Biggs et al.

Biggs et al (2001) revised the "Ask a learning process" for use by teachers in assessing student learning approaches presented. This tool uses a five-point Likert scale of 18 questions (strongly disagree (1) Disagree (2), idea (3), agree (4) fully agree (5).) The discovery of the 9 categories and coherence, the use of reason, time management, development, study, planning, remembering incoherent, clay failure and the lack of objective evaluation. Given that the questionnaire study in the research process sugar (unpublished) the validity (exploratory factor analysis and confirmatory factor analysis) has been reviewed and approved this study are based on survey.

4-2- Metacognitive awareness questionnaire (MAI) Schraw and Denison

This 52-item questionnaire that measured the dimensions of metacognitive awareness. That cognitive measures of metacognition (questions 1 to 19) and cognitive control (Questions 20 to 52) and measures. Schraw and Denison (2004), the internal consistency coefficient between 0.88 to 0.93 of the scale and reliability of the questionnaire, the Cronbach's alpha 0.93 report.

4-3- Self-regulated learning strategies questions MSLQ Pintrich and De Groot

MSLQ no public infrastructure cognitive view of Rahbradhay motivation and learning. The device consisted of a motivational strategy and learning strategies. Motivational section with 31 questions is The goals and beliefs of students towards studying and learning values, their beliefs about their skills for success in a course of study and test anxiety measures that period. In addition, this section includes 31 questions about students' use of learning strategies, cognitive and metacognitive strategies and 19 different items of information resource management by students. Therefore, version 1991 MSLQ by Pintrich and colleagues norm of 81 items. Motivational Strategies section 3 of part (component) is divided into: 1) valuation (including measures intrinsic value of the objective, external evaluation of the purpose and value of the obligation), 2) expected (including self-learning and self-control measures); and 3) emotional (anxiety scale test). The strategies of two components: (1) cognitive and metacognitive strategies (including measures of rehearsal, elaboration, organization, critical thinking and metacognitive self-regulation) (2) Resource Management (including time management and study environmental measures, ordering to try, learn from peers and seeking help is made, The strategy used in this study is not Garavalia validity and technical characteristics are important measures. Pintrich et al (1999) noted that internal consistency (Cronbach's alpha) of the scales is strong and confirmatory factor analysis, factor analysis clearly shows. Once again the validity of the study (Alborzi and Samani, 2000, Afrooz et al., 2005) using the test retest reliability coefficient was 86%

4-4- RTS reflective thinking questionnaire Mezirow and Kember

This tool Mezirow and Kember was built in 2011 to assess the learner's reflective thinking. This is a self-report instrument and has 16 participants in a Likert scale consists of five degrees of agreement or disagreement with each statement makes it clear. The buoy-factor analysis of reflective thinking, Mezirow and Kember four factors identified for this scale is that each of the four measures. Subscales of the questionnaire are: habitual action, understanding, reflection and critical thinking. Each of these factors are the 4 questions. Based on the results obtained, the reliability of the test and in tests it is appropriate approaches. The reliability of the test in normal operation 0.82, 0.85, reflecting an understanding of 0.83, 0.86, critical reflection.

To analyze the data obtained from the questionnaires, descriptive and inferential statistical methods were used. The measures of central tendency and dispersion statistics, frequency tables and graphs of data, and inferential statistics Pearson correlation, multiple regression model and path analysis were used. Using software spss18 used.

5- Results

According to research conducted in this study, 37.3% female and 62.74% of the sample size of the study students have formed. The highest prevalence of students who are studying at high school level. (Ie 39.7%), Cross only 10.9 percent of high school. The figure for second grade high school students to 24.3 percent. 25.1 percent of high school students in the third grade. In learning the highest average belonged to the "remembering incoherent" is (2.62). Students participating in this study, the highest score of metacognitive awareness

component "cognitive control" have (3.88) and the lowest component score "metacognition" have (3.01). The self-regulation strategies highest average belonged to the "Waiting" is (4.81). The high school students in Qom believe that self-regulation strategies, "Waiting" is more effective than other dimensions. Students participating in this study, the highest score in reflective thinking component "normal operation" have (3.50) and the lowest score on the component "critical reflection" have (2.78).

Table 1. Summary Shapiro Wilks test

sig	Test statistics	Component	Variable
0.63	0.965	Total Learning Approach	Learning Approach
0.69	0.967	Metacognition	Metacognitive awareness
0.68	0.967	Cognitive control	
0.90	0.978	Total Metacognitive awareness	
0.55	0.775	Rate	Regulation
0.62	0.805	Emotional	
0.57	0.821	Expectation	
0.39	0.952	Cognitive and metacognitive strategies	
0.76	0.970	Human resource strategies	
0.57	0.906	Total Regulation	Reflective thinking
0.80	0.861	Total Reflective thinking	

Shapiro Wilkes test for normality measurement data table. If the test data show normality can be a parametric statistics to test hypotheses and significant Pearson's correlation between the two averages. As a result of the high level variables are significantly related to the total amount "is more than 0.05. In other words, the normal distribution of data on these variables.

Table 2. Meta-awareness and self-correlation matrix of reflective thinking

sig	Correlation	theories	Components
P = 0.01	r = 0.412	Assumption 1: metacognition with reflective thinking	Metacognitive awareness
P = 0.01	r = 0.202	Assumption 2: Control metacognitive with reflection thinking	
P = 0.01	r = 0.650	Assumption 3: Valuation with reflective thinking	Regulation
P = 0.01	r = 0.490	Assumption 4: Waiting with reflective thinking	
P = 0.01	r = 0.360	Assumption 5: emotion with reflective thinking	
P = 0.01	r = -0.317	Assumption 6: cognitive and metacognitive strategies with reflective thinking	
P = 0.01	r = -0.756	Assumption 7: Resource Management with reflective thinking	

Based on the high correlation obtained (r) with significance level of 0.01 = p shows the relationship between variables metacognitive awareness reflective thinking positive and meaningful. Among the aspects of self-regulation (valuation, will and emotions) and a significant positive relationship with their reflective thinking; hence hypothesis (first, second, third, fourth and fifth) with 99% and the 0.01 confirms be. But cognitive and metacognitive strategies and resource management and significant negative relationship with reflective thinking.

Table 3. Meta-awareness and self-regulation of correlation matrix approach to learning

sig	Correlation	theories	Components
P = 0.01	r = 0.720	Assumption 8: metacognition with mediated learning approach	Metacognitive awareness
P = 0.01	r = 0.214	Assumption 9: Control metacognitive with mediated learning approach	

P = 0.01	r = 0.216	Assumption 10: Valuation with mediated learning approach	Regulation
P = 0.01	r = 0.203	Assumption 11: Waiting with mediated learning approach	
P = 0.01	r = 0.224	Assumption 12: emotion with mediated learning approach	
P = 0.01	r = 0.255	Assumption 13: cognitive and metacognitive strategies with mediated learning approach	
P = 0.01	r = 0.223	Assumption 14: Resource Management with mediated learning approach	

Between metacognitive awareness and self-regulated learning approach because of the high correlation obtained (r) at the 0.01 level and there is a significant positive correlation (P=0.01). Therefore it can be assumed zero in the eighth to fourteenth 0.01 in favor of hypothesis rejected the study and concluded that 99% of all components of metacognitive knowledge and self-learning with high school students in Qom there is a significant positive relationship.

Table 4. Summary and multivariate regression coefficients for the relationship between metacognitive knowledge and self-reflective thinking students

sig	t	Beta	R2	R	F (ANOVA)	Model
0.01	7.22		0.013	0.114	0.691	(Constant)
0.01	0.175	0.009				Metacognition
0.01	-0.651	-0.035				Cognitive control
0.01	-0.380	-0.044				Rate
0.01	0.916	0.097				Emotional
0.01	0.318	0.040				Expectation
0.01	0.470	0.056				Cognitive and metacognitive strategies
0.01	-1.065	-0.127				Human resource strategies

Based on the standardized regression coefficients, charts relationship between metacognitive awareness and self-reflective thinking to the analysis we formulated as follows:

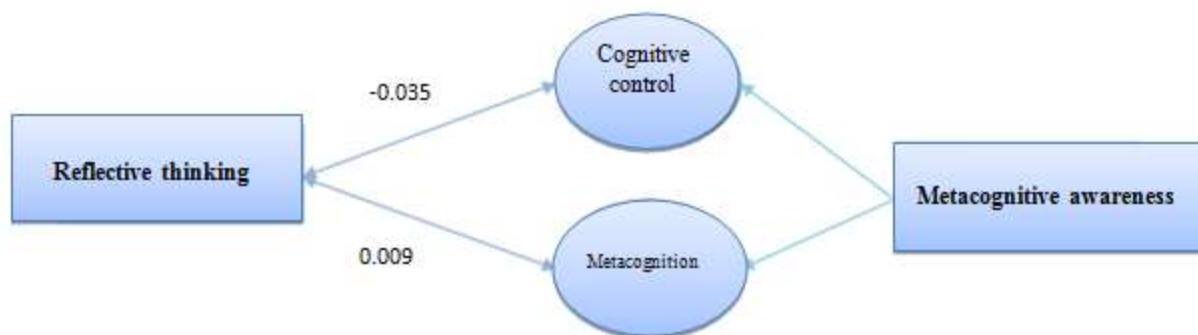


Figure 2. Charts the relationship between metacognitive awareness of reflective thinking in students

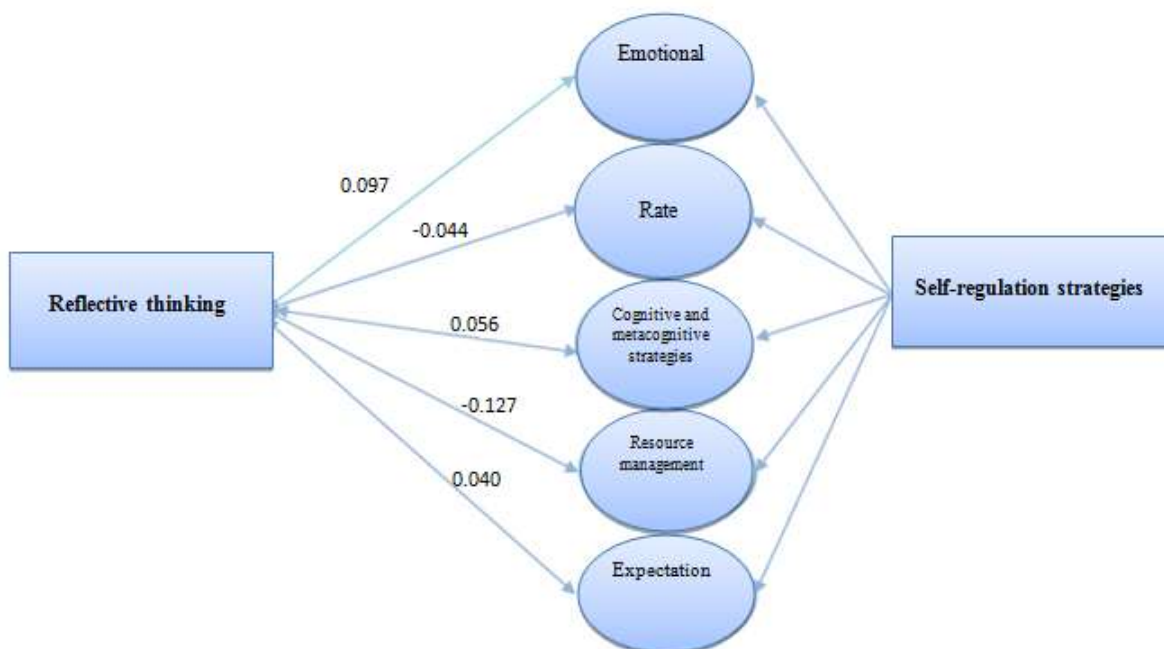


Figure 3. Chart of the relationship between self-regulation strategies of reflective thinking in students

Based on the analysis, it can be said that an increase of one standard deviation of "metacognition", "emotional", "expect" and "cognitive and metacognitive strategies" in high school students in Qom respectively as 0.09, 0.097, 0.040 and 0.056 units of "reflective thinking" decreases in school improvement. And a decrease of 1 unit of standard deviation in the "cognitive control", "valuation" and "Resource Management", respectively, 0.035, 0.044 and 0.127 of reflective thinking students will be reduced.

Table 5. Summary and multivariate regression coefficients for the relationship between metacognitive awareness and self-regulated learning with student

sig	t	Beta	R2	R	F (ANOVA)	Model
0.01	3.520		0.108	0.329	6.357	(Constant)
0.01	0.937	0.480				Metacognition
0.01	1.692	0.860				Cognitive control
0.01	1.279	0.140				Rate
0.01	-0.105	-0.110				Emotional
0.01	0.379	0.450				Expectation
0.01	1.832	0.208				Cognitive and metacognitive strategies
0.01	0.111	0.13				Human resource strategies

Based on the standardized regression coefficients, charts relationship between metacognitive awareness and self-regulation mediated learning approach will be formulated as follows:

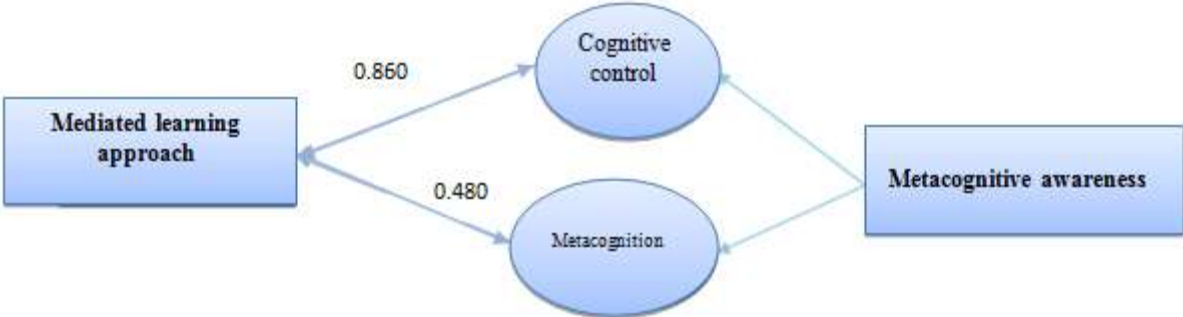


Figure 4. Charts the relationship between metacognitive knowledge of learning in students

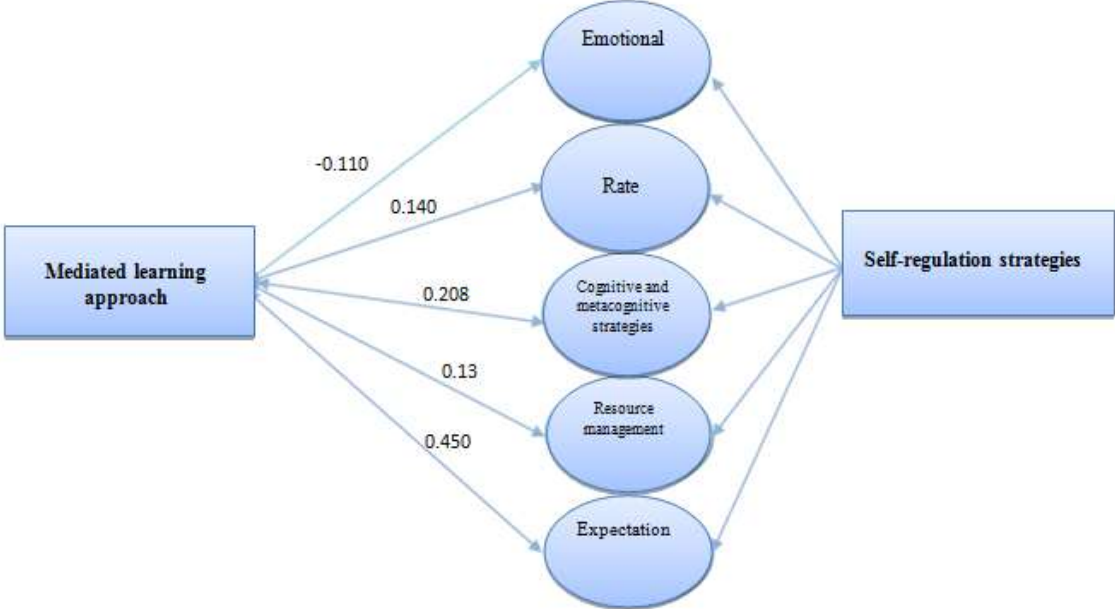


Figure 5. Graph of the relationship between self-regulation and learning strategies among students

Based on the analysis, it can be concluded with an increase of one unit in the "metacognition", "cognitive control", "valuation" and "expects", "cognitive and metacognitive strategies" and "Resource Management" in high schools in the city of Qom by as much as 0.480, 0.860, 0.140, 0.450, 0.208 and 0.13 units of "learning" in schools will improve. And a decrease of 1 unit of "emotional component" 0.110 units of the mediation approach student learning will be diminished.

6. Summary of the results of the analysis

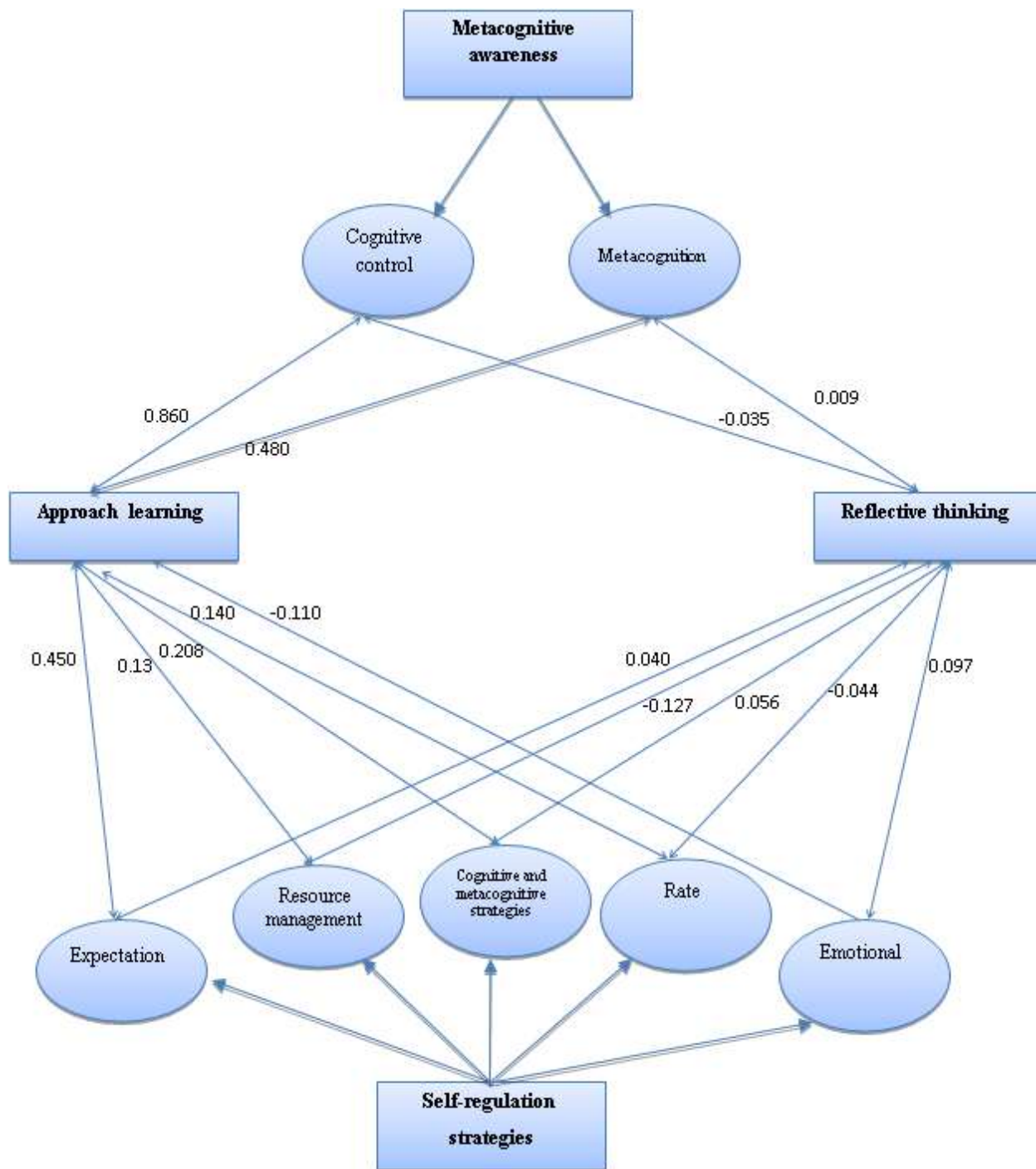


Figure6: Summary of the results of the analysis

7. Conclusion

Based on this study, the following results were obtained:

- The most frequent are male students. (Ie 62.7%) compared to 37.3 percent of female students.
- The most frequent level of education among high school students (ie 39.7 percent)
- Analysis of the data shows that the highest average in the component after learning of "remembering incoherent" is (2.62).
- The metacognitive awareness component of the students participating in this study, the highest score component "cognitive control" have (3.88)

- The element of self-regulation strategies, although higher than the average of all sizes medium (3). However the highest average belonged to the "Waiting" is (4.81).

- Students participating in the research component of reflective thinking, the highest score component "normal operation" have (3.50) and the lowest score on the component "critical reflection" have (2.78).

- In theory first, second, third, fourth and fifth dimensions of metacognitive knowledge (meta-cognitive and meta-cognitive control) and of self-regulation (valuation, will and emotions) and there is a significant positive relationship. This finding Kuiper et al. (2012), Kashefi and colleagues (2011) are consistent.

- In assumptions between the sixth and seventh aspects of self-regulation (cognitive and metacognitive strategies and resource management) and there is a significant negative relationship. This finding Kuiper et al. (2012), Kashefi and colleagues (2011) are consistent.

- The assumption of the eighth to fourteenth with 99% confidence conclude that among all components of metacognitive awareness and self-regulated learning with high school students in Qom there is a significant positive relationship. This finding SarbazVatan Research (2014), Sadeghi and colleagues (2013), Javadi et al (2013), Tolo Takmili Torabi (2013), Brown (2010), Khadem et al (2014), Kajbaf and colleagues (2013), Slavin (2009) are consistent.

- Based on multiple regression and path analysis was concluded in the fourth quarter with an increase of one unit in the "metacognition", "emotional", "expect" and "cognitive and metacognitive strategies" in high school students in Qom respectively as much as 0.96, 0.97, 0.40 and 0.56 units of "reflective thinking" in schools will improve. And a decrease of 1 unit of "cognitive control", "valuation" and "Resource Management" respectively 0.35, 0.44 and 0.127 of reflective thinking students will be reduced.

- Based on multiple regression and path analysis for the hypothesis of the eighth to fourteenth in the fourth quarter was concluded with an increase of one unit in the "metacognition", "cognitive control", "valuation" and "expects", "cognitive and metacognitive strategies" and "Resource Management" in high schools in the city of Qom, respectively, to 0.480, 0.860, 0.140, 0.450, 0.208 and 0.13 units of learning "in schools will improve. And a decrease of 1 unit of "emotional component" 0.110 units of the mediation approach student learning will be diminished.

According to research in the field of the relationship between metacognitive awareness and self-reflection and mediation thinking approach to learning at high school students in Qom are several suggestions for future research here are a few examples will be mentioned.

- It is recommended that research on topics like the subject of the research carried out in other cities and provinces.

- The study used a questionnaire, can be used from other methods, such as interviews.

- From other models of self-regulation and metacognitive knowledge is used.

- Proposed self-regulation and metacognitive awareness initiatives such as "emotional intelligence" or "empowerment" be studied.

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