

Relationship between learning strategies (meta-cognition) and the male creativity in gifted high school students in Babol city

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Abstract: This study carried out to assess the relationship between learning strategies (meta-cognition) and the creativity of the students. The aim of this study was to investigate the relationship between cognitive self-awareness, self-monitoring, planning and cognition (as predictor variables) as creatively as the criterion variable was analyzed using correlation. The population for this study n = 416 gifted high school students in Babol city in the academic year 2011-2012. Through stratified random sampling, the proportion of students in four grades, 72 students in first grade, 58 students in second grade, 42 students in third grade and 34 students in fourth grade was selected as the sample. This 20-item questionnaire of students meta-cognitive two Torrance creativity O' Neil and Abed and 60 questions answered. Results were analyzed by Pearson's correlation and hypothesis 5 was confirmed to be higher than 95 percent. The results showed that cognitive strategy, creativity, knowledge and creativity, and creativity is self-monitoring, planning and creativity, there is a significant relationship between cognition and creativity. Students agree and agree completely with the emphasis on the options indicated a desire to refine and review their activities, tried and tested ideas and goals of the association with their prior knowledge and understanding and its practical application were looking to learn a lesson, learning strategies and the ongoing process of self-reflection and their progress was tracked and organized. Faced with the difficult problem of these people tried to find a proper way to solve it and enjoy it, the piece it tried to have lost build liked activities They understand group Co. others about what she called the innovative ideas were welcomed and joined his most recent work.

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Introduction:

Both thinking (meta-cognition) and creativity (renewal) are a set of techniques and strategies to help people deal with problems and solve them safer to take action. The overall aim of the strategy is a strategy or a plan or a map that is composed of a series of operations and is designed to achieve a specific goal (Seif, 2010).

Learning strategies and study with both the cognitive and meta-cognitive strategies are introduced. Knowing and understanding the meta-knowledge to know about is called (Seif, 2010).

Based on Flavel, J.H. view, ways of learning and cognitive strategies, meta-cognitive strategies, cognitive strategies to monitor and control their conduct (Seif, 2010). Based on Brown (1988) point of view, meta-cognitive awareness or understanding of the administrative processes to decide which man must do both cognitive processes and the development of the knowledge to be a cognitive review of planning meta-cognitive as well as the strategy reinforcing. Within a decade, to add to the learner's ability to prevail in the areas of learning and doing work on the development of "learning strategies" is stressed (Dari and Murphy, 1986). Creativity is also one of the variables defined in this

study; it can be said of any new, rational responses to a subject (Zare and Farzandeh, 2008). Creative intelligence is not the purpose of the distinction between these two terms. Due to differences in intelligence and creative thinking Guilford 2 (convergent and divergent) suggests. It is related to intelligence, while convergent thinking divergent thinking creativity is an important feature. Convergent thinking is evident in the thinking of the previous. While there is no definitive answer on divergent thinking is significant. Guilford's theory of divergent thinking and creativity that represent different characteristics (fluidity, flexibility, novelty, stretch, composition, organization, complexity, originality) is formed (Zare and Forouzandeh, 2008).

Statement of Problem

In "The relationship between learning strategies (meta-cognition) and creative gifted students in Babol city center" cognitive variables-knowledge, self-monitoring, planning, cognition, and creativity are studied and evaluated. If you do not move in the right direction both thinking and creativity, to some extent, play a deterrent role. Because ill even thinking, creativity and innovative ideas without straying into sets. Creativity is not a

trait that only a few individuals, so the plan should be tailored to the practical needs of those programs. For example, a student in the process of making it (creativity) and learning (cognitive strategies, knowledge, temperament, planning and cognition) is commensurate with their qualifications and without regard to this matter; the more one-sided top (managers) to bottom (students) will be imposed. Makes it difficult to truly creative and powerful considered. Although diversifying teaching and learning activities for students (with frequent changes in educational systems, the correlation between vocational education and training, focusing on programs related to health and physical education, diversity training centers, and non-governmental) was carried out by the authorities. Not for the detection, identification, education, interests, talents, skills, and have realistic expectations of their work (written texts appropriate to each province or region, appropriate training for teachers updating information of Smart Schools, seriously taking classes. laboratories, workshops and computers, lack of focus and emphasis on memory tests) may be performed.

Researchers believe that the survival of societies to make effective use of creative abilities and the nature of creativity and its development strategies. Creativity and cognition are two factors that have a positive impact on pupils' performance; particularly in problem solving meta-cognitive strategies can be taught and helped them to a variety of solutions for solving problems and dealing with learning difficulties find (Niazazari, 2003).

In this study, we tried to answer the question of whether cognitive strategies, knowledge, self-monitoring, planning, and learn to recognize their giftedness and creativity are there?

This paper introduces two prominent human concession (thinking and creativity) is two separate questionnaires were used with a variety of questions from different, angles and comprehensive study of the subject is results of a prospective follow directions and give importance to this study. The most sumptuous of the most complex aspects of human thought to the future of human creativity, creative thinking, innovation and problem solving helps.

Hilgard and behavioral change Marquez believe that learning is through experience (interactions with the environment and one's environment) to be established in humans, including physical and mental skills and attitudes that (Fazli Khani, 2002). In this study, indicators such as awareness, self-monitoring, planning, and cognitive strategies in a process of 20 questions (5 questions) were taken into account.

Dembo (1994) argues that meta-cognitive

strategies can be found in three categories: 1- Strategies for Planning; 2- Strategies for controlling, monitoring; 3- Strategies. Creativity, mental process consisting of ingenuity and flexibility is the ability to think creatively potentially is based on the human right to education has contributed to the growth (Zare and Forouzandeh, 2008). Creative person can often return to a normal state of the body or different and exciting ways to understand it. This can be a style of teaching, quality of learning, new equipment and better in the future will be to identify and facilitate teaching and learning.

Some of the objectives of this research are:

- The relationship between students' learning strategies and creativity.
- Provide guidelines for proper planning in the field of cognition and creativity of students.
- The hypothesis of this study was to determine the relationship between cognitive awareness, self-monitoring, planning and cognition deals with creativity.

Literature Review:

As research examining the relationship between cognition and creativity and academic achievement by Golestani Jahromi (2009) conducted showed that there is a significant relationship between academic achievements. At the end of a Farahi (2001) with learning, creativity and sexuality was demonstrated between creativity and learning, there is a relationship between sex and creativity.

A review of research on the relationship between motivational beliefs and cognitive strategies - cognitive and academic achievement in 250 high school female students by Abedini, Bagherian and Kadkhodaei (2010) was performed. Results indicate a significant relationship between academic motivational beliefs, meta-cognitive strategies, cognitive and academic achievement.

Based on the results of the democratic process research and chaste (2009) as the cognitive component of student academic performance on 150 high school boys and girls; the cognitive state has a positive relationship with performance. Cognitive state of the education component (meta-awareness, self-monitoring and cognitive strategies) can be effective in academic performance.

In a study by Lam., A. Kavandi Institute education in Hong Kong (2008) conducted a meta-cognitive strategies impact learner performance test strategy. Results showed that the experimental group performed better than the control group received their knowledge and strategies meta-cognitive strategies and choice have increased.

Cognitive capacities, and provide an opportunity to think of meta-cognition and its

components (knowledge, self-monitoring, cognitive strategy, planning) and the components of creative (fluidity, flexibility, originality and elaboration). Creativity is infinite loss of future brain and the creative genius that is in accordance with what it is. Man can certainly infinitely many ways to be creative. Realizing the real challenge in this day and age, there is the arrival of post-industrial society (Zinker; quoted by Torrance). Meta-cognition is the "set active, conscious control and order the learning process" (Anderson and Nashoon, 2006). Creativity is about divergent thinking, this thinking is a mental search for all possible solutions to a problem. Convergence is the idea of looking for a correct answer is (icon, 1985). Recognition occurs when the

learner is conscious of cognitive skills (Glover, 1989). Well Aremba Vester (1988) argues that cognitive training is effective in improving cognitive activities are worthwhile.

Several studies showed that cognition has a direct relationship with cognitive performance in individuals with higher cognitive ability are more to solve the problem. Can be injection molded part, a person who is creative problem solving.

The method used in this study is the correlation between the variables and try to meta-cognitive strategies, knowledge, planning, creativity, self-study and review of the variables to be determined.

Community sample according to educational level

Groups Statistical Indicators	First Grade	Second Grade	Third Grade	Fourth Grade	Total
Frequency of each class	146	116	86	68	416
Ratio of each class to society	0.35	0.28	0.21	0.16	1
Ratio of each samples to society	72	58	42	34	206

In this study, two questionnaires were used in cognition and creativity.

20-item questionnaire with a variable number of questions about cognition O'Neil and Abedi

Variable	Number of items
Meta- cognition	1-2-3-4-5- ... - 60
Knowledge	1-2-3-4-5- ... - 22
Cognitive strategy	23-24-25-26-27-28-29-30-31-32-33
Planning	33-34-35-36-37-38- ... - 49
Self-monitoring	50-51-52-53-54-55-56- ... - 60

Variables introduced 60-item questionnaire with a number of questions in Torrance Creativity

Variable	Number of items
Creativity	1-2-3-4-5- ... - 20
Fluid	1-5-9-13-17
Expansion	3-7-11-15-19
Initiative	4-8-12-16-20
Flexibility	2-6-10-14-18

Reliability coefficient of the questionnaire in this study, meta-cognition and creativity

Variable	Cronbach alpha
Knowledge	0.683
Cognitive strategy	0.625
Planning	0.650
Self-monitoring	0.611
Meta- cognition	0.807
Creativity	0.732

In this study, five hypotheses were tested with questions.

Hypothesis 1) Correlation and significant level between the two variables of cognitive strategies and creative students

Pearson Correlation	Creativity	Cognitive strategy
Correlation of cognitive strategies	0.289	1
Significant level	0.00	0.00
Number	206	206

As the results, Salarifar and Pakdaman (2009) found in their study cognitive state training components (knowledge, self-monitoring, planning,

and cognitive strategy) can be effective in academic performance.

Hypothesis 2) Correlation and significant level between variables, verification and creativity of their students

Pearson Correlation	Creativity	Cognitive strategy
Correlation of cognitive strategies	0.179	1
Significant level	0.01	0
Number	206	206

Aghazadeh Vahedian (2008) has pointed out: meta-cognition is to review the fundamentals and learning path is divided into two categories: 1-

Review the process of learning Personal Empowerment; 2- Weekly Reminders.

Hypothesis 3) Correlation and significant level between the two variables of planning and creativity of students

Pearson Correlation	Creativity	Cognitive strategy
Correlation of cognitive strategies	0.222	1
Significant level	0.001	0
Number	206	206

If you are planning to determine time, place, facilities, elements. The research results Guilling, Tilman, Marshner, Vires, and Loenz showed

readiness to use meta-cognitive learning strategies at the right time increases positive results on student learning leads to relatively consistent.

Hypothesis 4) Correlation and significant level between the two variables, of meta-cognition and creativity of students

Pearson Correlation	Creativity	Cognitive strategy
Correlation of cognitive strategies	0.265	1
Significant level	0.00	0
Number	206	206

Results showed that there was a significant relationship between cognition and creativity of students and simply the awareness of students (currently thinking, awareness of strategies, action plans need to be aware of this thought process, conscious of his attempting to understand the question) is more effective as well as their creativity. The students planned (see the questions before the test, the test requirements, to ensure things are done, the way to solve the test, trying to understand the material before answering questions) and more students agreed with this components may be more creatively as they will have a positive impact. The

attention of the students agreed with the (original ideas Discover the test, an examination of the relationship previous question, think about the purpose of each question, the use of multiple strategies, organizing information for problem solving test) higher levels of creativity of students would be more. Students agreed to review (review and correct, correct mistakes, knowing your score the tests, track progress toward strategic change, management responses when answering questions correctly) would be more equally creative.

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