

SIGNIFICANCE OF METACOGNITION IN ACADEMIC ACHIEVEMENT

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ABSTRACT

The study was conducted on a sample of 100 students (of B.com) purposively drawn from Maharaja College, Chhattarpur (M.P.). Metacognition Inventory (M.C.I.) constructed by Dr. Punita Govil (2003) was used to assess the met cognitive level of the sample. Sample was divided into two G1 and G2. G1 students acquired less than 55%. Results reveal that there is increased with the level of metacognition. Metacognition enables a person not only to plan out administer or regulate a task but it also helps in when, which strategy is to be used for a task. On gender-wise comparison, it was sound that there was no difference between groups on the basis of gender but the scores differ with the performance in academic. Hence, if the students are instructed to increase their metacognitive level with the help of experts; an increase in academic can also be seen.

KEYWORDS: Metacognition, and Academic Achievement

INTRODUCTION

Metacognition involves analysis of the process of thinking. In changing world of today, it is very important that on understands his/her learning processes and uses the information to solve new problems as the learning environment changes, **Metacognition** is defined as "cognition about cognition", or "knowing about knowing." It can take many forms; "It includes knowledge about when and where to use particular strategies for learning or for problem solving. "Metamemory", individuals' knowledge about memory, is an especially important from of metacognition.

The concept of metacognition is on recent origin. **J.H. Flavell** (1976) first used the word "Metacognition". He describes it in these words:

"Metacognition refers to one's knowledge concerning one's own cognitive processes or anything related to them. e.g., the learning-relevant properties of information or data. For example, I am engaging in metacognition if I notice that I am having more trouble learning A than B; if it strikes me that I should double check C before accepting it as fact".

Taylor (1999) defines metacognition as "an appreciation of what one already knows, together with correct apprehension of the learning task and what knowledge and skills it requires, combined with the ability to make correct inferences about how to apply one's strategic knowledge to a particular situation, and to do so efficiently and reliably."

Metacognition is an important concept in cognitive theory. It consists of two basic processes occurring simultaneously: *monitoring your progress* as you learn, and *making changes and adapting* your strategies if you perceive you are not doing so well. (Winn, W. & Snyder, D., (1998) It's about self-reflection, self-responsibility and initiative, as well as goals setting and time management.

"Metacognitive skills include taking conscious control of learning, planning and selecting strategies, monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies and changing learning behaviors and strategies when necessary." (Rindley, D.S., Schutz, P.A. Glanz, R.S. & Weinstein, C.E. 1992).

Objectives

The following were the objectives of this study:

- To find out the level of metacognition achievement in academics of students.
- To find out gender difference in the level of achievement in academics and in metacognitive level also.

HYPOTHESIS

The following were the Hypothesis of this study:

- Academic achievement will have significant relationship with metacognition of students.
- There will be significant difference between level of metacognition in males and females.

METHODOLOGY

Methodology is an important aspect in any kind of research work. Every research study has its own objectives. The procedure adopted by the Research works for the realization of these objectives is known as Methodology. "Methodology is the science of methods or principles of procedure" (Good, 1945).

TYPE OF RESEARCH AND DESIGN

It is an exploratory study using descriptive analysis.

Sample

A sample of 100 students, divided into two Groups; Group1 and Group2. Group1 consists of 50 students (25 male and 25 female with more than 65% marks in senior secondary class and other 50 (25 male and 25 female students in Group2 with less than 55% marks in the same class. Sample distribution was as follows:

Table 1

Gender	Group 1	Group 2	Total
Male	25	25	50
Female	25	25	50
Total	50	50	100

Tools

M.C.1. (Meta-Cognitive inventory) constructed by Dr. Punita Govil (2003) was used. This inventory consists of 30 items to respond on 4-point scale. Maximum score on this inventory is 120 and minimum is zero. A high score reflects high level of metacognition.

PROCEDURE

Sampled students were administered the MCI in groups. Mean and S.D. were calculated of both the groups.

RESULTS AND DISCUSSIONS

Total scores, Mean and S.D. of both (Group1 and Group2) were calculated is presented in the following table and Figure.

Table 1: Mean and SD of Male and Female on the Basis of Marks

Gender	Group 1	Group 2	Total
Male	N=25 ΣX=2545	N=25 ΣX=1870	Σ=4415 M=88.30
Female	N=25 ΣX=2535	N=25 ΣX=1894	Σ=4429 M=88.58
	Σ=5080 M=101.6 SD=5.15	Σ=3764 M=75.28 SD=3.81	

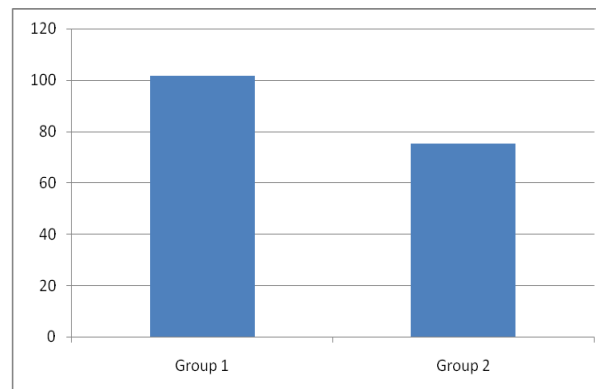


Figure 1: Mean of Group1 & Group2 on the Basis of Marks

From the results presented in Table 1 and Figure 1. it appears that the group which received higher scores in metacognition inventory were also high achievers in their academics i.e. Group 1 total scores were 5080, mean score is 101.6; whereas in Group 2 total scores are 3764, mean score is 75.28. The Group whose academic achievement is less received less score in M.C.I. This shows that metacognition an academic achievement have positive relationship. If we took at the S.D. of both the groups then also a significant difference which can be seen. Group 1 S.D. was 5.15 and for Group 2 it was 3.81 which shows difference which cannot be neglected.

First hypothesis is proved i.e. Academic achievement and metacognition have significant relationship. Going on to the Gender-wise difference, there is no significant difference seen in the total and mean scores. Metacognition has no impact on gender.

If a student is able to understand his way of thinking i.e. thinking about his thinking then he/she is able to plan, organize, monitor and assess a work. Whether it is of day-to-day life or of his academic performance A person becomes able to know that which strategy is to be used in particular situation because a single strategy is not useful in all the task or work or situation. In every situation and along with the time strategies are to be changed then only a

person can succeed. The knowledge about these strategies in the metacognition.

On the whole it can be concluded that study strategies are diverse and don't work in every context. For example, reading for information acquisition won't work in literature course and won't work if students are supposed to critically evaluate an article. But students who have learned only strategy of reading to pass a quiz on the information will not go beyond this strategy. Study strategies don't necessarily transfer into domains. Students need to know they have choices about which strategies to employ in different contexts. And students who learn study skills in one course need to apply study strategies in other contexts than where they first learned it.

Metacognition helps people to perform many cognitive tasks more effectively. Strategies for promoting metacognition include self-questioning (e.g. "What do I already know about this topic? How have I solved problems like this before?"), thinking aloud while performing a task, and making graphic representations (e.g. concept maps, flow charts, semantic webs) of one's thoughts and knowledge. Carr, 2002 argues that the physical act of writing plays a large part in the development of metacognitive skills (as cited in Gammil, D., 2006, p. 754).

Metacognition is classified into three components:

- Metacognitive knowledge (also called metacognitive awareness) is what individuals know about themselves and others as cognitive processors.)
- Metacognitive regulation is the regulation of cognition and learning experiences through a set of activities that help people control their learning.
- Metacognitive experiences are those experiences that have something to do with the current, on-going cognitive endeavor.

The more students are aware of their thinking process as they learn, the more they can control such matters as goals, dispositions, and attention. Self-awareness promotes self-regulation. If students are aware of how committed (or uncommitted) they are to reaching goals, attention to thinking or writing task, they can regulate their commitment, dispositions, and attention (Marzano et al., 1988) For example, if students are aware of commitment to writing a long research assignment, noticed that they were procrastinating, and were aware that they were distracted more appealing ways to spend their time, they could then take action to get started on the assignment. But until they are aware of their procrastination and take control by making a plan for doing the assignment, they will blissfully continue to neglect the assignment.

Rote memorization is the usual learning strategy often the only strategy employed by high school students when they go to college (Nist 1993).

REFERENCES

1. Carr, S.C. (2002) Assessing learning processes: Useful information for teachers and students. *Intervention in School and Clinic*, 37, 156-162.
2. Flavell, J.H. (1976). Metacognitive aspects of problem solving. In L.B. Resnick (ed.). *The nature of intelligence* (pp.231-236). Hillside, NJ: Erlbaum.

3. Falvell, J.H. (1979). Metacognitive and cognitive monitoring : A new area of cognitive development inquiry. *American Psychologist*, 34, 906-911.
4. Flavell, J.H. (1987). Speculations about the nature and development of metacognition. In F.E. Weinert & R.H. Kluwe (Eds.). *Metacognition, Motivation and Understanding* (pp.21-29) Hillside, New Jersey: Lawrence Erlbaum Associates.
5. Gammil. D. (2006). Learning the Write Way. *The Reading Teacher*, 59 (8), (754-762).
6. Govil, P. (2003). What the literature says about academic literacy. *Georgia Journal of Reading*, (Fall-Winter, 1118).
7. Nist, S. (1993). Meta-cognition inventory. National Psychological Corporation, Agra (India).
8. Ridley. D.S., Schutz., P.A., Glom, R.S. & Weinstein. C.E. (1992). Self-regulated learning: the interactive influence of metacognitive awareness and goal setting. *Journal of Experimental Education* 60 (4), 293-306.
9. Roberts, M.J.>, & Erdos, G. (1993). Strategy selection and metacognition. *Educational Psychology*, 13, 259-266.
10. Swarup, Smiriti (1999). Metacognitive and cognitive strategy training for the children with learning disability, *Journal of Media and Technology for Human Resource Development*, 11(2) Jan.. 75-90
11. Taylor. S. (1999). Better learning through better thinking: Developing students' metacognitive abilities. *Journal and College Learning*, 30(1), 34ff Retrieved November 9, 2002, from Expanded Academic Index ASAP.
12. Winn, W. & Synder D. (1996) Cognitive propectives in psychology. In D.H. Jonassen, ed. *Handbook of research of educational communication and technology*, 112-142. New York : Simon & Schuster Macmillan.

