

CREATING AN EXPERT LEARNER THROUGH METACOGNITIVE INSTRUCTION

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ABSTRACT

The present article is based on the study results of the authors. How metacognitive instructions can help in the learning process? What is metacognitive process and what are its components. The term metacognitive was introduced for the first time in 1976 by Flavell. The term refers to the individual's own awareness and consideration of his or her own cognitive processes and strategies. It refers to the unique human capacity to be self reflexive, not just to think and know, but to think about their own thinking and knowing. The article throws sufficient light on the different components of metacognition, its importance in the learning process and different techniques and strategies which are involved in the system of metacognitive instructions.

INTRODUCTION

Learning relies on a complex synthesis of biological maturation, prior knowledge and experience, reasoning ability and instruction. Student's learning capabilities at any age depend heavily on their prior knowledge and experiences, which can help or hinder them from learning some thing new or have no effect. This extensive range of knowledge and experience stems from learner's socio-economic status, gender, ethnicity, culture, native language, and other factors. Different learners require different kinds of explicit instructional support and guidance to understand and do scientific inquiry and to understand the body of scientific knowledge.

At the beginning of any learning activity, students need to list their pre requisite knowledge and the knowledge to be constructed. As they delve into their investigation, they will verify, clarify and expand or replace their pre-requisite knowledge with more accurate information. It is always interesting to analyze one's strengths and weaknesses and helping the student to use that knowledge for improvement. In order to make learning meaningful the learner should study the materials by himself. To successfully understand the task, a student needs tools to monitor and evaluate the learning process. Effective tools in the self learning process can be the student by himself. Students

can use their self questioning abilities to regulate, evaluate, and reflect to learn the task thoroughly. The Learner can also use technology, media and text as tools to regulate, evaluate and reflect on his/her learning. This idea of controlling own thinking processes and becoming more conscious of our learning is called Metacognition, it is a buzzword in teacher education. It is an old term in a new age of educational reforms. It goes hand in hand with authentic assessment, constructivism, and holistic learning. Higherorder thinking skills are what teachers are striving for in the class room, yet the highest - order ought to be our new goal.

The term metacognition was introduced by Flavell in 1976, to refer to the individual's own awareness and consideration of his or her own cognitive processes and strategies (Flavell, 1979). It refers to the unique human capacity to be self- reflexive, not just to think and know, but to think about their own thinking and knowing. Metacognition- is an awareness of oneself as "an actor in his environment, that is, a heightened sense of the ego as an active , deliberate storer and retriever of information. It is whatever " intelligent weaponry the individual has so far developed" is applied to mnemonic problems (Flavell, 1977; Hacker,2001).

COMPONENTS OF METACOGNITION

It is observed that modern studies discuss the

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metacognition under two main headings; Metacognitive Knowledge and Metacognitive Control (Flavell, 1979; Schraw, 2000). Metacognitive knowledge, in one case, refers to one's knowledge and beliefs within his mental resources and his awareness about what to do. Metacognitive knowledge means one's own cognitive skills; own cognitive strategies and knowledge about what to do under which circumstances (Flavell, 1979). Metacognitive knowledge requires one to accurately and exactly define his/her thought or knowledge. However, metacognition requires one, besides the knowledge mentioned above, to use this knowledge effectively. The ability to use metacognitive knowledge, on the other hand, is called metacognitive control. Also called metacognitive strategies, the metacognitive control skills consist of leading mental operations in metacognitive processes and can be defined as the ability to use the metacognitive knowledge strategically in order to attain cognitive objectives (Chi et al. 1989). Metacognitive Control is considered as the ability to use knowledge to regulate and control cognitive processes. Metacognitive control is related with metacognitive activities that help to control one's thinking or learning (Ozsoy et al., 2009).

SIGNIFICANCE OF METACOGNITION

It is obvious that metacognition is an important concept and a critical strategy to teach in the classroom. If people are taught metacognitive awareness concerning the utility and function of a strategy, they are more likely to generalize the strategy to new situations. This process of metacognition is reflected in learning. metacognition plays an important role in regulating the mental process. It works as an alarm if the student has found a problem. In a face to face instructional context, teacher can find out the progress of students by asking questions while teaching a concept, in learner centered approach students learns material by interacting with self and the material, systematic evaluation, monitoring of the task and learning process by individual can be helpful in learning the material. There is a dynamic relationship

between the learner and the learning materials. This dynamic relationship activates through metacognition. Metacognition involves self correction, self assessments and self reflection.

METACOGNITIVE INSTRUCTION

Metacognitive instruction means teaching learning based on different strategies of metacognition. Metacognitive strategies range from simple processes such as underlining, outlining, note taking, summarizing, self-questioning, to more elaborate methods such as hierarchical summaries, conceptual maps, thematic organizers, and metaphorical thinking. The older students best handle the more elaborate methods. Learning strategies vary by degree of difficulty. The most important task to teach to the students is when to use such a strategy. The awareness of knowing when to use a metacognitive strategy is of more importance than the how to use the strategy.. The more students are aware of their thinking processes as they learn, the more they can control such matters as goal, dispositions, and attention. Self-awareness promotes self-regulation. Education becomes meaningful only when it creates better learners in the present to make better performance in the future.

Who is a better learner or a better performer?

"Knowing how to learn, knowing which strategies work best are the skills that differentiates expert learners from novice learners'. To make a learner an expert in learning, we, the teachers should help him/her to regulate his /her learning. Educators are always concerned about what educational methods can benefit the learners the most. So as a facilitator or stage setter, the teacher should make the learner independent in the acquisition of knowledge and its internalization. Metacognition or awareness of learning is a critical ingredient to successful learning. Once a person has learned his strategies for learning he can go from being a novice learner to an expert. Metacognitive Instruction includes the following strategies.

- Setting the goal
- Determine the appropriate learning task
- Mastery of learning task through metacognitive operations

*** Planning**

- i. Task analysis & Orientation
- ii. Metacomprehension - allocation of resources, concentration and time
- iii. Metaattention - motivating to respond-attending the stimuli of the task
- iv. Metamemory - knowing one's memory systems
- v. Directed attention - deciding to maintain attention to the listening task
- vi. Selective attention - planning to pay attention to situational aspects

*** Monitoring**

- i. Judging the importance of ideas and testing whether he/she has reached

*** Repairing or Self regulation**

- i. Identification of obstacles
- Orchestration of operations
- Execution/re-execution of operations
- Reflection
- Self evaluation

Initially the teacher created a problematic situation related to the content and then checked previous knowledge to assess the entry behaviour of the students and teacher helps the students to (a) set the target and (b) to determine the appropriate learning task. During the second stage the students should go through the learning content and analyse it carefully to fix (a) the time needed to master the content (b) availability of learning materials suitable to the learning task (c) different strategies to be followed. The individual learner can do mastery of learning task through the following metacognitive operations.

- 1. Planning
- 2. Meta-comprehension
- 3. Meta-attention
- 4. Meta-memory

5. Monitoring & Evaluation

6. Regulation

After that the students interact with learning materials, with other learners, under the guidance of the teacher/Investigator. Group discussion and Brain storming strategies would be encouraged for finding solutions to overcome difficulties that might arise while dealing with the complicated concepts. The learners are asked to check their level of acquisition of the content and by testing. If students come across any errors, they are asked to rectify them on their own or by seeking help either from peers or from the teacher.

In the final stage the learner should ask himself,

- 1. How well did I do?
- 2. Did my particular course of thinking produce more or less than I had expected?
- 3. What could I have done differently?
- 4. How might I apply this type of thinking to other problems?
- 5. Do I need to go back through the task to fill in any "blanks" in my understanding?

REFERENCES

Flavell, J.H. (1995). Young Children's Knowledge About Thinking Monographs for the Society for Research in child Development. Chicago: University of Chicago Press.

Halpern, D. F. (1996). Thought and knowledge: An introduction to critical thinking. New Jersey: Lawrence Erlbaum Associates, Publishers.

Hacker, D.J .(1998). Metacognition in educational theory and practice. Mahwah, N.J: Erlbaum.

Schunk, D. (1989). Social cognitive theory and self-regulated leaning. In B.J. Zimmerman and D.H. Schunk (Eds.) Self-regulated learning and academic achievement: Theory, research, and practice. New York: Springer-Verlag.