THE ROLE OF METACOGNITIVE KNOWLEDGE IN LEARNING PROCESS

Dr.Mrs.P.NARMATHASREE
Assistant Professor in Education, Department of Education,
Gandhigram Rural Institute, Deemed University,
Gandhigram, Dindigul District, Tamil Nadu

Dr.A.JAHITHA BEGUM
Professor and Head, Department of Education,
Gandhigram Rural Institute, Deemed University,
Gandhigram, Dindigul District, Tamil Nadu, India

Introduction

The UNESCO stated that Education should take a 'non-utilitarian' approach, contribute to the participants' personal well-being and serve of self-fulfillment and ensure their social insertion. The statistical Appraisal by Ministry of Statistics and Programme Implementation (A Report of Children in India, 2012) stated that Education is the fourth necessity for man after food, clothing and shelter, in today's competitive world. The education is the process of instruction aimed at the all-round development of individuals, providing the necessary tools and knowledge to understand and participate in day to day activities of today's world. It dispels ignorance and boosts moral values of the individual. So the Article, 21A of the constitution of India directs the state to provide free and compulsory education to all children within the ages of 6 and 14 in such manner as the state may law determine. The UNICEF promotes the child-friendly schooling model as a packaged, human rights-based, Child-Centered approach addressing all aspects of quality education. Child-friendly schooling helps countries promote quality in education and sets standard for improvement in everything from schooling infrastructure to learning outcomes. It is essential to note that PISA, 2000 was not a conventional school achievement testing, the domains of reading, mathematical and scientific literacy are covered not merely in terms of mastery of the school curriculum, but in terms of important knowledge and skills needed in adult life' (www.pisa.oecd.orgl). The individual development depends on

the level of correct way of understanding the concept around him. These understanding develop through met cognitive knowledge and awareness among students. The metacognitive knowledge and awareness make learning easy and meaningful; this paper is going to explain the importance of metacognitive knowledge in teaching learning process.

Cognition

Cognition is a faculty for the processing of information, applying knowledge and changing preferences. Cognition, or cognitive processes, can be natural or artificial, conscious or unconscious. These processes are analyzed from different perspectives within different contexts, notably in the fields of linguistics, anesthesia, neurology and psychiatry, psychology, philosophy, anthropology, systemic and computer science. Within psychology or philosophy, the concept of cognition is closely related to abstract concepts such as mind, intelligence. It encompasses the mental functions, mental processes (thoughts)and states of intelligent entities (humans, collaborative groups, human organizations, highly autonomous machines and artificial intelligences) (http://en.wikipedia.org/wiki/Cognition). Cognition is assumed to be a function of the brain, just as breathing is a function of the lungs or blood circulation is a function of the heart. The human brain may well be the most complex structure in the known universe (Sejnowski and Churchland, 1989).

Meta cognition

Meta cognition is important in learning and is a strong predictor of academic success; students with good meta cognition demonstrate good academic performance compared to students with poor meta cognition. Students with poor metacognition may benefit from meta cognitive training to improve their metacognition and academic performance. During the last 30 years meta cognition has become one of the major fields of cognitive development research. Research activity in metacognition began with John Flavell, who is considered to be the father of the field, and there after a considerable amount of empirical and theoretical. Moreover, a number of strategies aiming to enhance children's metacognitive abilities have been suggested, which teachers through all educational levels can apply in their instruction. (Eleonora, 2003)

'Metacognition' is a concept that has been used refers to a variety of epistemological process. Metacognition essentially means cognition about cognition; that is, it refers to second –order cognition: thought about thought, knowledge about knowledge or reflections about actions. So if these various cognitions about cognitions can be labeled metaperception , 'meta comprehension ' and ' metamemory' with ' metacognition' remaining the super ordinate term.

Chambres et al. (2002) stated that historically, the investigation of metacognition processes has preceded a long two almost entirely separate lines. On the one hand, there has been extensive research in developmental psychology spurred mainly by the work of Flavell (1979) and his association, which emphasized the critical role of metacognitive processes in the development of memory functioning in children. On the other hand, there has been a line of investigation in cognitive psychology that has focused narrowly in several questions concerning the determinants and consequences of the monitoring on one's own knowledge.

Flavell (1978) referred to it as 'knowledge that takes as its object or regulates any aspect of any cognitive endeavor. Moore (1982) defines it as 'an individual's knowledge about various aspects of thinking' and it has also been described as the abilities of individuals to adjust their cognitive activity in order to promote more effective comprehension.

Gradually, the concept has been broadened to include anything psychological, rather than just anything cognitive. For instance, if one has knowledge or cognition about one's own or someone else's emotions or motives. This can be considered metacognitive. Flavell (1979), when trying to all those conscious cognitive or affective experience that accompany and pertain to an intellectual enterprise Jahitha Begum.A. And Mohan .S. (2007) stated that Metacognition, a latest buzzword in cognitive psychology is not as daunting a concept as it might seem. Metacognition enables us to be successful learners and has been every day. Metacognition enables us to be successful learners and has been associated with intelligence. Although the term has been part of the vocabulary of educational psychologists for a couple of decades, there is much debate over exactly what metacognition is. The various studies on metacognition provide educational psychologists which insight about cognition process involved in learning and what different successful student's from their less successful peers.

Met Cognitive Learning Objectives and Goals

Metacognition is oriented on the mental processes that occur with cognition. Therefore, learning objectives on a metacognitive level as formulated by teachers refer to mental status and processes. Since these are very personal and not easily accessible to the teachers. The personal learning goals of the students can differ from the intentions of the teacher. Also, extra learning goals emerge, such as determining cognitive learning goals and reducing the real world by attain these goals (Henkvos and Graaff De, 2004).

Examples of metacognitive objectives are for example being able; to define a newly developed concept; to find structure in some given information; to model reality; to solve real-world problems to design a new product; or to regulate your learning yourself. Problems related to these objectives lie on the three higher levels of the

Bloom's taxonomy of problems; analysis, synthesis, and evaluation. Such tasks can be executed in several alternative ways, which give some choice and freedom to the students (Henkvos and E. De Graaff, 2004).

Other such metacognitive developmental objectives are that students are able; to pursue their curiosity with respect to nature, technology, human dynamics and. or society; to find a way to understand a phenomenon that is in conflict with what they learned before; to distinguish between what they already known and what they do not yet know; to develop alternative ways to solve a given problem, compare these and / or choose the best; and to keep the goal in mind during problem-solving (HenkVos and E. De. Graaff, 2004)

Cognition and Metacognition

Begum Jahitha. and Mohan, S. (2014, p-7) stated in their book about cognition relation to metacognition is a primary problem with the concept of metacognition is that it is often difficult to distinguish between what is Meta and what is Cognitive (Brown, 1987). For example, the skill needed to read a text differs from the skill of monitoring one's understanding of the text. The first is an example of a cognitive skill, the second of the metacognitive sill. The knowledge that one is better at reading than at implementing software is of metacognitive nature. Research in cognitive skills in general includes different tasks, such as memory tasks, reading text, writing, language acquisition, problem solving, but also performing calculations, measurements, mathematical modeling, drawing, etc. cognition not only includes the observation and manipulation of objects, entities, reality, but also the often coupled to previously learned skills (Vos, 2001). Flavell (1979), in his model of metacognition, assumes that function, but are similar in their form and quality, i.e., both can be acquired, be forgotten, be correct or incorrect, and metacognition can be expressed in external formulations, with said information being either correct or not, subjective, shared, or validated, just like cognition.

Ann Brown (1987) distinguishes between knowledge about cognition, and regulation of cognition knowledge about cognition can be 'stable, stable but fallible or late developing' information that human thinkers have about their own cognitive processes. Which is usually remains relatively consistent within individuals, Regulation, on the other hand. Can be 'relatively unstable', rarely stable, and age independent. Regulation of cognition is refer to the activities used to regulate and oversee learning. One may show self-regulatory behavior where an adult does not. Regulation may be also affected by patterns of arousal (anxiety, fear, interest) and self-concept (self-esteem, self-efficacy). These processes include planning activities (predicting outcomes. Scheduling strategies and various forms of vicarious trial and error, etc.) prior to under taking a problem; monitoring activities (monitoring, testing, revising, and re-scheduling one's strategies for learning) during learning, and checking outcomes

(evaluating the outcome of any strategic actions against criteria of efficiency and effectiveness) at the end (Brown et al. 1983 and Flavell and Matkman, 1983).

Pene Ayala and Alejandro (2005) stated that the Effective learners use metacognitive knowledge and strategies to self-regulated their learning. Students are effective self-regulators to extent that they can accuracy determine what they know and use relevant knowledge and skills to perform a task and monitor their success. Strategy training is a powerful educational tool that improves learning and performance in academic domains such as elementary and middle school mathematics as well as non-academic skills such as driving and anxiety management.

The Role of Teachers in Improving Metacognitive Knowledge

The teacher should follow such practices to improve their Metacognitive Abilities in their regular classes such as

- Encourage the student to 'think alound' about new concepts learned in the classrooms.
- Make the students to his / her attention on understanding the way she / he thinks and the problems she /he has to solve.
- The teacher should ask not only for the results, but also for the procedure of thought and the strategy followed
- Every day Teach a new strategies for over - coming difficulties
- Place each subject among its relevant ones and find connections among them
- Encourage the student to generate questions before, during and after the elaboration of a subject
- Help the student to perceive entities, connections, relations, similarities and differences;
- Enable the student to become aware of the criteria for assessment.

Conclusion

School age is the period when children begin their formal learning and teaching and in this period they acquire certain belief, value of social skills, which become a permanent part of his personality. In their effort to promote metacognitive development in students, teachers should also offer them opportunities for the foresting of metacognitive experience, which in turn, will provide input to permanent metacognitive knowledge. Provide input to permanent metacognitive knowledge. Two important metacognitive experiences that have to promote are conscious and introspection. Teachers can engage children in cognitive enterprises that should produce specifiable metacognitive ideas and feelings. They can try to get them to attend to these ideas and feelings; to help them understand their meanings and implications for subsequent cognitive action; and to teach them how to generate metacognitive experience, as well as to respond appropriately to them.

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