

ROLE OF METACOGNITION SKILLS IN ACADEMIC ACHIEVEMENT OF SCHOOL STUDENTS

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Introduction

Education in the largest sense is any act of experience that has formative effect on the mind, character or physical ability of an individual. In its technical sense, education is the process by which society deliberately transmits its accumulated knowledge, skills and values from one generation to another. All round development has been considered as the first and foremost aim of education. At the same time education ensures that there is a progressive development of innate abilities, Pestalozzi is of the view that "Education is natural, harmonious and progressive development of man's innate powers. Education enables us to control, give the right direction and sublimation of instincts. It helps us to prepare the kids for their future life. Education is regarded as the potential instrument of national development.

A modern society cannot achieve its aim of economic growth, technical development and cultural advancement without fully harnessing the talents of its citizens. Educationists thus strive to develop fully the intellectual potential of the students and make efforts to see that their potentialities are fully recognized and channelized for the benefit of the individual and that of the society. So, education is the process of bringing out the talents and potentialities of an individual and to unfold the natural abilities and interest before the society. It proceeds from birth to death and schools exert greater influence in educating the child and promoting learning or academic achievement.. A balanced education, while aiming at total growth, should give full opportunity to the learner to discover and use his fullest potential. It should cater for the development of skill, proper habits, attitudes and human values and application of knowledge as and when required with right dose. *As Swami Vivekananda said*, "Education is the manifestation of perfection, already present in man". The purpose of education is to detect talent proactively and the purpose of school education is to guide the child's discovery of himself, identify and nurture his potential to the fullest.

Teachers must perceive children as seeds to be nurtured and not as clay to be moulded. They must act as gardeners and not as potters. Man has tremendous potentialities as well as great energies to realize them. His

extraordinary thinking capacity, his wonderful imaginative powers, his considerable control over his senses and emotion, his marvelous intelligence and astonishing discriminating power, his sense of judgment, his penetrating reasoning and his inner self are some of the spiritual gifts given to him by the nature. Man is remarkable because of his fantastic creative powers. The progress and prosperity of a nation depends on the development of creative potential of its people. We are in a cognitive age where cognitive skills and qualities distinguish a healthy, dynamic economy from a less dynamic one, an individual who has wide economic opportunities, from one with limited ones. The world values people who have a good analytical thinking, aptitude skills and cognitive skills, who can see the big pictures from the details, and who can think in terms of multi-disciplinary combination.

We are all aware of the importance of analytical thinking, metacognitive skills and aptitude in today's globalized world. Yet, education systems throughout the world can do a lot more to help students develop analytical thinking, metacognitive skills and scientific aptitude. Metacognitive skills and scientific aptitude can be realized as educational outcomes when they are built in to a learning environment organized around how children learn and develop. Learning depends, in part, on the effective use of basic cognitive processes such as memory and attention, the activation of relevant background knowledge, and the deployment of cognitive strategies to achieve particular goals. To ensure that the basic processes are used effectively, that the activated knowledge is indeed relevant, and that appropriate strategies are being deployed, learners also need to have awareness and control of their cognitive processes.

This higher-level cognition was given the label metacognition by American developmental psychologist John Flavell (1976). "Metacognition" is one of the latest buzz words in educational psychology but what exactly is Metacognition? The length abstract nature of the word makes it sound intimidating, yet it is not as daunting a concept as it might seem. We engage in metacognitive activities every day. Metacognition enables us to be successful learners, and has been associated with intelligence. Metacognition refers to higher order thinking which involves active control over the cognitive processes engaged in learning.

Metacognitive Skills

Meaning of Metacognition - Metacognition is an individual's knowledge of their own cognitive processes and their ability to control their processes by organizing, monitoring and modifying them as a function of learning. It refers to the ability to reflect upon the task demand and independently select and employ the

appropriate reading, writing, math or learning strategy. Metacognition is an important aspect of student learning. It involves self regulation, reflection upon an individual's performance strengths, weaknesses, learning and study strategies. Metacognition is the foundation upon which students become independently readers and writers. It also underlies student's abilities to generalize math problem solving strategies.

According to Flavell (1979) who coined the term, metacognition is a regulatory system that includes: a) Knowledge b) Experience c) Goals and d) Strategies

Metacognitive knowledge is stored knowledge or beliefs about

1) Oneself and others as cognitive agents

2) Tasks

3) Action or strategies, and

4) How all these interact to affect the outcome of any intellectual undertaking? Metacognitive experiences are conscious cognitive or effective experiences that concern any aspect of an intellectual undertaking. Knowledge is considered to be metacognitive (as opposed to simply cognitive) if it is used in a strategic manner to meet the goal. Metacognition defined as

- ✓ thinking about thinking and developing the process of solving problems and answering questions' ‘
- ✓ the examination of how we think about how we do things, how we go about finding solutions, how well we can understand and analyze the systems, strategies and techniques we use to think to do things' ‘
- ✓ an awareness of the process of how an answer is found, what strategies and type of thought has gone on and the previous experiences that have been used' ‘
- ✓ to consciously apply a process, a procedure to a problem or activity and to be aware that the result is satisfactory or otherwise. To be able to ‘unpick’ that strategy/those actions and so improve performance’
- ✓ ‘awareness of the different processes involved in thinking’
- ✓ ‘the ability to take out our thinking, and examine it, and put it back, rearranged if necessary’ ‘thinking about thinking rather than just remembering facts and recalling events’

Students with Metacognitive Needs

Have difficulty with planning and setting goals, such as:

1. Have difficulty anticipating future events that would require them to plan and set goals for themselves
2. Have difficulty in planning how they will do their assigned work
3. Not be able to plan short, medium, and long-term objective
4. Have difficulty in deciding what is important to focus on and what is not important
5. Have difficulty in imagine a work goal and stating the steps required to meet that goal
6. Have difficulty independently generating ideas, responses, or problem-solving strategies
 - ***Have difficulty in initiating tasks***, such as:
 - a) Have difficulty in getting their work started
 - b) Procrastinate, rather than getting to work
 - Have difficulty following through, such as:
 - a) Have difficulty in sustaining work on future-directed tasks
 - b) Have difficulty with managing and completing school work
 - Be ineffective at monitoring their work for accuracy, such as:
 - a) Rush through their work and make careless mistakes
 - b) Lack work-checking habits to assess his or her own performance, and therefore let careless errors stand
 - c) Fail to find their own errors, even if they do check
 - d) Be unable to describe the part of the work that they find difficult
 - e) Not realize when to ask for assistance, or how to ask.

Importance of Metacognition in Learning

Metacognition plays an important role in communication, reading comprehension, language acquisition, social cognition, attention, self-control, memory, self-instruction, writing, problem solving, and personality development. Metacognition is a type of knowledge and ability that develops with personal experience and with schooling. Metacognition refers to a level of thinking that involves active control over the process of thinking that is used in learning situation. Metacognitive skills are usually conceptualized as an interrelated set of competencies for learning and thinking and include many of the skills required for active learning, critical thinking, reflective judgment, problem solving and decision making. Planning the way to approach a learning task, monitoring comprehension and evaluating the progress towards the completion of a task, these are

skills that are metacognitive in their nature. Similarly, maintaining motivation to see a task to completion is also a metacognitive skill. The ability to become aware of distracting stimuli both internal and external and sustain efforts over time also involves metacognitive or executive function. Metacognition plays a critical role in successful learning, it is important to study metacognitive activity and development to determine how students can be taught to better apply their cognitive resources through metacognitive control. Metacognition consists of both metacognitive knowledge and metacognitive experiences or regulation. Metacognitive knowledge refers to acquired knowledge about cognitive processes. Further metacognitive knowledge divided into three categories: knowledge of person variables, task variables and strategy variables. Knowledge of person variables refer to general knowledge about how human beings learn and process information, as well as individual knowledge of one's own learning processes. For e.g., you may be aware that your study session will be more productive if you work in the quiet library rather than at home where there are many distractions. Knowledge of task variables includes knowledge about the nature of the task as well as the type of processing demands that it will place upon the individual. For example, you may be aware that it will take more time for you to read and comprehend a science text than it would for you to read and comprehend a novel. Finally, knowledge about strategy variables include knowledge about both cognitive and metacognitive strategies, as well as conditional knowledge about when and where it is appropriate to use such strategies. Metacognitive experiences involve the use of metacognitive strategies or metacognitive regulation, metacognitive strategies are sequential, processes that one uses to control cognitive activities, and to ensure that a cognitive goal (e.g., understanding a passage from the text) has been met.

Thus, the metacognitive strategy of self-questioning is used to ensure that the cognitive goal of comprehension is met. A metacognitive environment encourages awareness of thinking. Planning is shared between teachers, school library media specialists, and students. Thinking strategies are discussed. Evaluation is ongoing. In the creation of a metacognitive environment, teachers monitor and apply their knowledge, deliberately modeling metacognitive behavior to assist students in becoming aware of their own thinking. Metacognitive strategies are already in teachers' repertoires. We must become alert to these strategies, and consciously model them for students. Problem-solving and research activities in all subjects provide opportunities for developing metacognitive strategies.

Teachers need to focus student attention on how tasks are accomplished. Process goals, in addition to content goals, must be established and evaluated with students so they discover that understanding and transferring thinking processes improves learning. In this rapidly changing world, the challenge of teaching is to help students develop skills which will not become obsolete. Metacognitive strategies are essential for the twenty-first century. They will enable students to successfully cope with new situations. Teachers and school library media specialists capitalize on their talents as well as access a wealth of resources that will create a metacognitive environment which fosters the development of good thinkers who are successful problem-solvers and lifelong learners.

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