# Metacognitive process of teaching learning

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**Abstract**
Metacognitive perspectives are actions which go beyond purely cognitive devices and which provide away for learners to coordinate their own learning process. It will make the learners understand the objectives of learning and leads to self-evaluation. It involves selection of contents, planning, monitoring, evaluation and achievement. In this concept, the learner is made to set his / her goal, analyse his / her strength and weaknesses, plan the learning, monitor the process and evaluate self.

**Keywords:** Metacognition, Process, Teaching-Learning

## Introduction

"Cognition" refers to the process of knowing. "Meta" is derived from the Greek word which means "beyond". Metacognition refers to knowing how we know or how we learn, consciously controlling our learning process and taking ownership for our learning. Metacognition is a goal for students which teachers can encourage so that students take ownership of their own learning. Metacognition refers to learners' automatic awareness of their own knowledge and their ability to understand, control, and manipulate their own cognitive process. Metacognitive skills are important not only in school, but throughout life. For example, Mumford (1986) [2] said that it was essential that an effective manager has to be a person who has learnt to learn. He describes this person as one who knows the stages in the process of learning and understands his or her own preferred approaches to it – a person who can identify and overcome blocks in learning and can bring off-the-job learning to on-the-job situations. When teachers and parents try to help students, it is important not to do too much thinking for them. By doing their thinking for the children they wish to help, adult or knowledgeable peers may make them experts at seeking help, rather than expert thinkers.

## Concept of Metacognition

The basis of Metacognition is the notion of thinking about one's own thoughts. How the thoughts can be looked at in three different dimensions, viz., knowledge, skill and experience. Since it includes what one knows about that internal representation, how it works, and how one feels about it, Metacognition sometimes has been defined as thinking about thinking, cognition of cognition, or in Flavell's (1979) words, "knowledge and cognition about cognitive phenomena". In Flavell's description that metamemory involves intelligent structuring and storage, intelligent search and retrieval, and intelligent monitoring suggests that Metacognitive thoughts are deliberate planful, intentional, goal-directed and future oriented mental behaviours that can be used to accomplish cognitive tasks (Flavell, 1971). 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". The idea of deliberate, planful, and goal-directed thinking applied to one's thoughts to accomplish cognitive tasks is deeply embedded in Piaget's conceptualization of formal operations in which higher - order levels of thought operate on lower - order levels. During this stage of cognitive development, the abilities of the adolescent begin to differentiate from those of the child.

## Features of Metacognition

According to Flavell, a person's ability to control "a wide variety of cognitive enterprises occurs through the actions and interactions among four classes of phenomena: (a) Metacognitive knowledge, (b) Metacognitive experiences, (c) goals (or tasks) and (d) actions (or strategies)". It consists of one's stored world knowledge. That "has to do with people as cognitive creatures and with their divertive cognitive tasks, goals, actions' and experiences". It consists of one's knowledge or beliefs about three general factors: his or her own nature or the nature of another as a - cognitive processor; a task, its demands, and how those demands can be met under varying conditions; and strategies for accomplishing the task (i.e., cognitive strategies that are invoked to make progress toward goals, and Metacognitive strategies that are invoked to monitor the progress of cognitive strategies) AR. Saravanakumar & S. Mohan (2007) [3] Metacognitive knowledge of the task would be required to provide understanding of how he had previously managed the demands of tasks that he perceived to be similar to the one at hand and Metacognitive knowledge of himself would be required to provide understanding of whether he, as a problem solver, could meet those demands. Metacognition involves "active monitoring and consequently regulate and orchestration" of cognitive process to achieve cognitive goals (Flavell).

## Determinants of Metacognition

A thinking person is in charge of his behaviour. He determines when it is necessary to use Metacognition strategies. He selects strategies to define a problem situation and researches alternative solutions. He tailors this search for information to constraints of time and energy. He monitors, controls and judges his thinking. He evaluates and decides when a problem is solved to a satisfactory degree or when the demands of daily

living take a temporary or permanent higher priority. Studies show that increases in learning have followed direct instruction in Metacognitive strategies. These results suggest that direct teaching of these thinking strategies may the useful, and that independent use develops gradually. Before we go deeply into this, let us see the determinants of Metacognition AR. Saravanakumar (2008) [4, 5]. The process of self-awareness leads one towards learning. It involves multiple factors interlinked and one may not exactly say where it begins. But anyway, if we look into these factors in a broader perspective, we may say, 'social influences' stand as the base for one's learning. Take for example, the associations between verbal perceptual ability, and others factors which affect learning. Verbal ability may be the result of the value placed on it by a society or family. It may also be the result of the verbal processing capacity of working memory. Both will likely affect preferences in learning patterns, those weaker in verbal abilities will prefer to learn through a visual mode. This preference will affect the type of knowledge or skills a person develops as they seek out tasks that compliment their abilities. Verbal ability may also be affected by one's Metacognitive behaviour; if one can't identify characteristics of a task, monitor their progress and process feedback, they may not realize they have difficulty with verbal tasks, or learn from their mistakes.

## Role of Metacognition in Learning
David Nunan, Clarice lamb (1996) - speaks about effective management in language learning which has three dimensions.
 1. Planning and preparation
2. Classroom strategy coping with problems as they arise.
3. Whole-school strategy ensuring that the actions and intention of teacher are in harmony.
Nunan emphasizes the learner-centered curriculum in language learning and how they want to go about learning. In Planning learners are consulted on what they want to learn and how they want to proceed in learning. They are involved in setting, monitoring and modifying the goals and objectives of the programs being designed for them. During Implementation, learners are actively using and reflecting on the language inside and outside the classroom. Assessment and evaluation learners monitor and assess their own progress. They are also actively involved in the evaluation and modification of teaching and learning during the course and after it has been completed. Awareness means learners are made aware of the pedagogical goals and content of the course. Involvement - learners are involved in selecting their own goals and objectives from a range of alternation of others.

## Metacognitive Process
Metacognition is an important concept in cognitive theory. It consists of two basic processes occurring simultaneously; viz., monitoring the progress as we learn, and making changes and adapting our strategies. When a student becomes more efficient in academic self-regulation, self-efficiency and self-reliance set in. This leads to an increase in motivation, which further strengthens the Metacognitive regulation and monitoring. The active monitoring, consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective result in better learning.

Metacognition involves learning about one's own thinking processes and learning how to learn. Metacognition processes include predicting, checking, monitoring and reality testing. It refers to the deliberate control of one's own cognitive action. The Metacognitive process includes better use of prior-knowledge, improving the ability both to monitor and self-direct the learning processes and to evaluate learning performance. The individuals with Metacognitive abilities excel in planning, managing information, monitoring, debugging and evaluating. Identifying the important aspects of a message, allocating attention to major content areas, monitoring the level of comprehension, checking whether the goals of comprehension failures are detected; and there is prompt recovery from disruptions and distractions. Verbal modelling of Metacognitive skills by high achieving students while learning in heterogeneous pairs will improve learning among both high and low achievers. Co-operative learning is effective for improvement of higher levels of cognitive processing, because in co-operative learning groups students will observe, imitate and build upon each other's strategies. This in turn increases their mastery of higher-level or reasoning skills.

## Constructivist Perspectives of Metacognition
Research on Metacognition in mathematics has yet to provide insight into how Metacognitive knowledge functions and develops within the evolving cognitive structure. We believe that by viewing the development of Metacognition as a part of the construction of knowledge, both the role of Metacognition in mathematics and on how Metacognition and cognitive structures interact to improve children's mathematics skills and knowledge may be made clearer. The data on Metacognition in mathematics in turn informs constructivists about aspects of cognitive development that need to be better explained in constructivism. Questions regarding the improvement of problem solving abilities through reflective thinking. For constructivists learning is an active experience in which what is to be learned depends on what faculties the learner brings to the situation. Specifically students bring to learning prior knowledge, previous experiences, and cognitive and affective traits that may aid or hinder their ability to learn. Further the, constructivist interpretation of Metacognition must explain, how Metacognitive knowledge emerges through children's experiences in learning but must also explain why it may be difficult or impossible for some students to attain Metacognitive knowledge. The basis for our constructivist understanding of how Metacognitive knowledge develops lies in scheme theory. Schemes of action and operation form the basis of conceptual knowledge and provide sites for the modification of this knowledge.

## Conclusion
Teaching is a process by which the teacher and the students create an interactive environment, in such a way that the students become effective and productive learners can reflect on how they think and learn, set performance goals, select potentially appropriate learning methods, and monitor their progress towards these goals. Teaching methods also focus on helping learners to develop Metacognitive perspectives on enhancing students learning and personal responsibilities.

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