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Integrating Thinking Skills across the Curriculum

Abstract

In recent years, the major concern has been expressed by educators, journalists and employers are lack of thinking skills in students. Employers frequently report that even the students who entered with high scores in their degree also lack the ability to think through problems and offer alternative solutions in their workplace. In the Indian higher education context, no attention is paid to the explicit stimulation of thinking skills and there is no such course related to thinking skills. Teachers also believe that thinking skills develop spontaneously through regular subjects. Thinking is not a subject to learn but it is a skill to be practiced consciously. It is a cognitive activity which involves remembering, forming concepts,

planning, imagining, and reasoning, solving problems, considering opinions, making decisions, making judgements and generating new perspectives. In this regard, this paper aims to investigate the impact of thinking skills interventions on teaching and learning in order to make learners as thinkers not just a degree holders as successful thinking in school and college is a necessary requisite of successful thinking in practical life.

Key words: Thinking skills, Writing and thinking, Thinking skills intervention

Introduction

Mastery of thinking skills is a necessary prerequisite for the students to compete with the technical society, where he/she should be highly unique in their content. In most of the countries, mastery of thinking skills is a major goal of instruction in almost all subject areas. In this respect, the ultimate aim of education is to enable the students to think what they learn, apply it in real situations or towards further learning, and can continue to learn independently (Gardner 1993). Further, it is a move towards making them independent learners. Education is not about having the children to see the world through our eyes but empowering them to see the world through their own eyes.

Thinking and thinking skills

The term thinking is used to elucidate every form of intellectual activity. Nathan C. Schaffer (1906) provides definitions regarding thinking. He quotes that the century dictionary defines thinking as an exercise of the cognitive faculties in any way not involving outward observation, or the passive reception of ideas from other minds. The domain of Thinking and Thinking skills are not the same. Beyer (1988) distinguishes thinking and thinking skills in the following manner: thinking is a holistic process through which we mentally manipulate sensory

input which are recalled as data to formulate thoughts, reason about or judge (72), but thinking skills or strategies are very specific operations that we deliberately perform on data to accomplish our thinking goals. Vail (1990) describes thinking skills as a set of skills that direct a person's mental processes and include knowledge disposition, cognition and metacognition.

Need for thinking skills education

The ability to think well, and think fast, will assume greater significance in the corporate world. The India Skills Report of 2018 states that “With the changing nature of work and workplaces, business activities ... the traditional silos of departments are being questioned and this will mean a new set of skills are required at individual contributor and manager level. The desired skill sets of most occupations are likely to comprise of skills that are not yet considered crucial to the job today. As per certain estimates Cognitive Abilities, Systems skills, Complex Problem Solving, Content skills, and Social skills are ... likely to be a growing part of the core skills requirements for many industries.”

The term thinking skill has recently become a buzz word in educational context in developing the students' ability for thinking critically and creatively and has gained importance all over the globe. Fisher (2007) claims that critical and creative thinking is now widely seen as a basic competency that should be taught similar to reading and writing. The importance of promoting higher order thinking skills in our students, is to make them effective thinkers in critical situations. Students learn in college, but whether they learn to think in college is debatable (McKeachie 1999). In relation to that, Schaffer (1906) states “the school master who teaches by rote is satisfied, if the pupils repeat his words or those of the book; but the true teacher sees to it that the pupils think the thoughts which the words convey”. Most of the thinking skills deficiencies that college students demonstrate have their origin, at least in part, in academic settings that emphasize memorization of isolated knowledge components, which

are devoid of meaning, lack of transferability, and easily forgotten (De Sanchez(1995). The reason is most of the schools and colleges view curriculum as content and encourage students to listen and recall the information. In that context, opportunities for developing higher thinking skills are limited. So, the teacher should prefer the tasks that motivate the learner to think and help them apply it in real life contexts

Teaching thinking skill

The role of teacher is not only teaching the factual knowledge but also the skills to think and learn. The significant task of the teacher is to facilitate students to acquire the ability to think, to solve problems and to make appropriate decisions. So it is the teachers' responsibility to promote opportunities to practice thinking skills. In relevant to the teaching of thinking, Nickerson et al. (1985) proposed five approaches:

- (a)The cognitive operations approach: cognitive operations approach believes that thinking problems are caused by an insufficient mastering of basic operations like classification and seriation. Application of this approach suitable for weaker students who have not yet mastered these operations (emphasis on neo-Piagetian and information processing theory).
- (b)The heuristic approach: In the heuristic approach all kinds of problem solving operations are taught, like problem analyses, planning, representation and verification. The essence of this approach is the task analysis, in which a task is split up into manageable parts or subtasks. After the analysis, attempts are made to improve a person's performance in the subtasks by training in the problem solving strategies and by involving metacognitive skills (emphasis on Vygotskian and information processing theory).
- (c)The formal thinking approach: In the formal thinking approach, the starting point is the neo-Piagetian or Piagetian theory. A characteristic of this approach is the integration of thinking operations into school subjects like science.

(d) Thinking as manipulation: In thinking as manipulation with language and other symbols, teachers stimulate the use of thinking skills by means of the regular school subjects. (emphasis on Vygotskian theory).

(e) Thinking about thinking (metacognition): In thinking about thinking (metacognition), it is assumed that a better understanding of the nature of one's own thinking process will improve one's competence in thinking. Students are encouraged to think about thinking in general, and to become more aware of their own thinking processes (emphasis on Vygotskian and information processing theory).

Metacognitive Thinking

Learning as a conscious activity or metacognition, the progress in learning happens when the students become more aware of their own activity. In that framework, it is important that students orient themselves well to the task, and make a plan of how to perform the task so that they need to work systematically, and analyse their mistakes and successful attempts. They also reflect on the mental steps taken in order to achieve integration of the knowledge. It is also observed that learners start thinking more efficiently by acquiring insight into their own mental processes and then by actively implementing these processes. An important means for achieving this aim is reflection, which means stimulating thinking about one's own thoughts or metacognition, "People have knowledge to a greater or lesser degree about their own cognitive system and how it works. The knowledge can concern their own thinking, memory, fantasy, reasoning, etc. and that of other people ..." (Boekaerts & Simons, 1993).

Writing as a Tool for Thinking

Writing is an active thinking process, which stimulates the writer to think and use his/her cognitive domain. In the classroom situations by asking the students to write

meaningfully and logically, will not enable them to perform better, because it is demanding on the part of the learners to understand what they think and how to organize their thinking. So, they must be educated how to become aware of the thoughts and how to organize them effectively and put it in words. It is the teachers' responsibility to enable the students to stimulate their mind actively in the learning process. Students have the potential to think, but they have never been motivated to utilize their mind to the logical end. If the students are trained to think progressively, then they are able to draft meaningful ideas on their own.

Conclusion

From the review of the research studies on thinking, it is understood the following skills will be developed in the thinking skills education. They are "comparing, classifying, estimating, summarizing, hypothesizing, synthesizing, sequencing, predicting, evaluating, translating, reorganizing, prioritizing, setting criteria, goal setting, problem solving, decision making, justifying, making assumptions, imagining, logical deducing, identifying consequences, observing, creating/designing and interpreting. So the teachers have to realise that thinking is the operating skill through which intelligence acts upon experience and their fundamental task is to stimulate their students to think and act accordingly.

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