

RELEVANCE OF RATIONAL THINKING IN THE SECONDARY SCHOOL CURRICULUM

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[Abstract: Man is a rational animal. Only because of his unique rational thinking ability man became superior to animals. Rational thinking helps us to arrive at sound conclusions in order to make us capable of doing something. It can be considered as a series of steps and processes. Humans have the competence to be rational, but various factors limit their performance. A rational decision is not only one that is just reasoned, but it is also ideal for achieving a goal or solving a problem. In the case of our classrooms, the students will remain passive listeners as long as the content transmission continues. Rational thinking is the combination of several thinking skills. Teachers can provide effective atmosphere for knowledge generation in the classroom through the practice of rational thinking. The teachers can not only teach the lesson contents but also to teach how effectively the students can channelize their rational thinking.]

The ancient man without any formal education invented fire by receiving signals from the environment of forest alone. It can be supposed that his cognitive abilities, but not the formal education, helped him for that great invention. Later people honoured him with the dictum that man is a rational animal.

The invention of fire was the first invention in the world by the man with his self-education. If we examine the modern instructional system, it can be understood that we are slowly incorporating 'self-education' when the principle of 'students construct knowledge' is implemented for the development of cognitive skills.

The present instructional strategy for Knowledge Management in India must be examined for its adequacy to develop students' skills required for higher education as well as for employability later. It is alleged that many students fail to secure ranks in admission tests conducted for professional courses and also in arts and sciences even though they got good ranks in the school examinations. Several studies were done for the analysis of the questions in higher secondary examinations and those in admission tests in order to find out the difference between the two tests even though the same students are appearing for both the examinations, but majority of the students who perform better in the school examinations are not able to secure good ranks in admission tests. The results of the studies showed that the school examinations are content oriented while the admission tests give more weightage to the application of cognitive skills.

This indicates that the present practice of instructional strategy used for knowledge management in education is unacceptable. As long as content transmission continues, students will remain passive listeners.

It is high time to redesign the instructional strategy by integrating it with the cognitive skills for effective knowledge management in education.

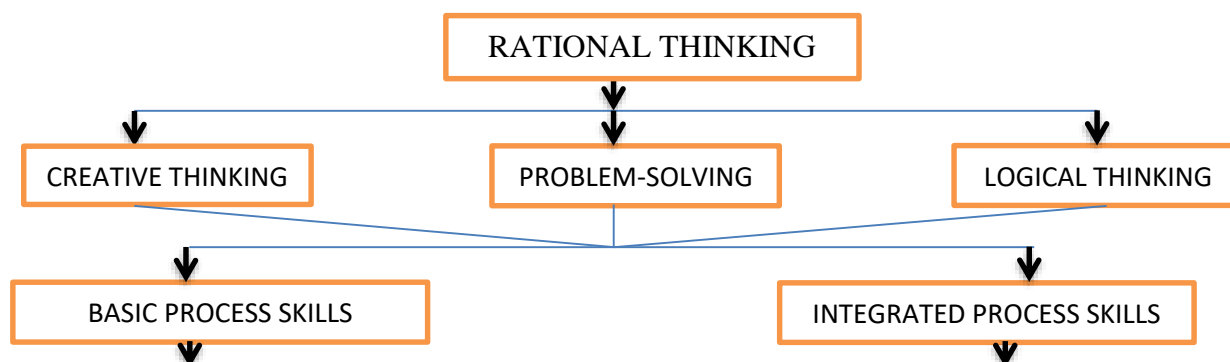
Wallace (2000) opined that in order to make the learners able to reflect on what they have been taught, the regular thinking about thinking is crucial for the transfer of thinking skills across the curriculum. This maximizes independent learning skills for example the process of making links with previous knowledge or 'bridging' (Adey & Venville, 2001)

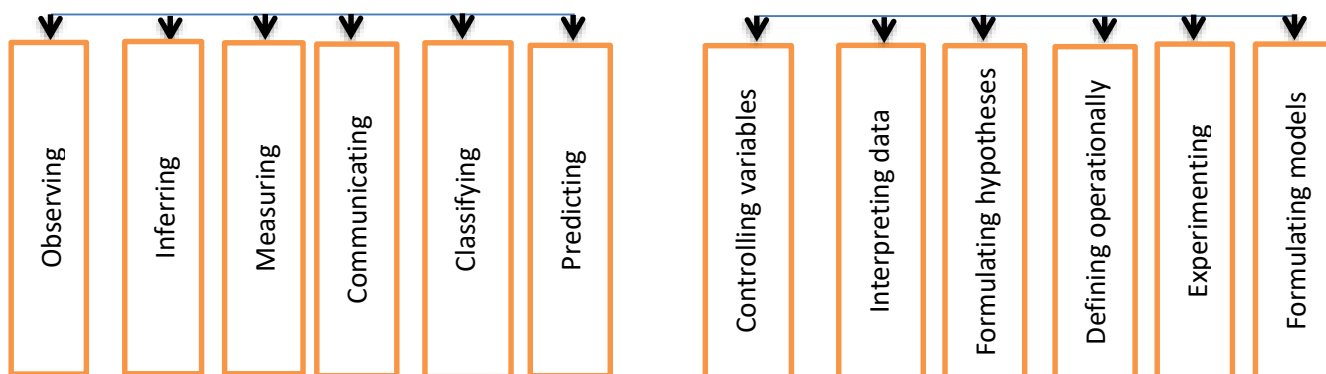
Development of cognitive skills is so important because the ability to learn and make sense of new information is crucial in successful learning. If cognitive abilities are fully developed, then only one can create knowledge. Many researchers have attempted to identify the key skills in human thinking. The taxonomy of educational objectives under cognitive domain (Bloom [Ed.], 1956) has been widely used by teachers in planning their teaching. He identified a number of basic or 'lower order' cognitive skills- knowledge, comprehension and application and a number of 'higher order' skills- analysis, synthesis and evaluation. Later Bloom's Taxonomy was modified by adding 'create' as an objective (Anderson & Krathwohl, 2001).

Human thinking can be categorized into several groups; among them rational thinking is specifically important and this can be considered as the combination of several thinking skills. It is obvious from the thoughtful words of Bertrand Russell: "It has been said that man is a rational animal. All my life I have been searching for evidence which could support this" (Ganesh, 2014) that Russell expressed the doubt about the significance of the term 'rational'.

On the basis of the skill analysis of Sreehari (2012), by the study of process skills, the classification by Science A Process Approach-SAPA (Padilla, 1990) and also through the analysis of the significance of cognitive education of 20th century and the sets of 21st century skills and the competence needed for a new millennium, creative thinking skill, problem-solving skill and logical thinking skill were identified as the three constituent skills of rational thinking. A paradigm comprising available brain based skills was schematically presented in Figure 1

Figure 1: Classification of Brain based skills





Rational thinking refers to the conformity of one's beliefs with one's reasons to believe, or with one's actions with one's reasons for action. A rational decision is not only one that is just reasoned, but it is also ideal for achieving a goal or solving a problem. Rational thinking is the ability to consider the relevant variables of a situation and to access organize and analyze relevant information to arrive at sound conclusion. Rational thinking helps us to arrive at a conclusion in order to make capable to do something. Rational thinking can be considered as a series of steps and also a process. A process is a meaningful, repeatable series of steps that produces an outcome. Every process requires inputs to produce some output.

Theories of Rationality

Cognitive scientists and psychologists have exposed different positions on human rationality in the psychology of reasoning. One prominent view, due to Laird and Byrne (1991) among others is that humans are rational in principle but they err in practice, that is, humans have the competence to be rational but various factors limit their performance.

There are several theories of the cognitive processes that human reasoning is based on. One view is that people trust on mental logic consisting of formal inference rules similar to those identified by logicians in the propositional calculus. Second view is that people rely on domain-specific or content-sensitive rules of inference. A third view is that people rely on mental models, that is, mental representations that correspond to imagined possibilities. A fourth view is that people compute probabilities.

Four types of rationality are included in Weber's theory of rationalization. They are- **Practical rationality**, is to be found in people's mundane, day to day activities and reflects on their worldly interests. All human beings engage in practical rationality in attempting to solve the routine and daily problems of life (Levine, 1981). **Theoretical rationality** involves an increasingly theoretical mastery of reality by means of increasingly precise and abstract concepts (Weber, 1958). **Substantive rationality** involves value postulates or cluster of values that guide people in their daily lives, especially in their choice of means to ends. **Formal**

rationality includes the rational calculation of means to ends based on universally applied rules, regulations and laws (Kalberg, 1980).

Instrumental rationality and **Epistemic rationality** are the other two types of rationality. Instrumental rationality is concerned with achieving goals. It is the art of choosing and implementing actions that steer the future toward outcomes ranked higher in one's preferences. Epistemic rationality involves achieving accurate beliefs about the world. It involves updating on receiving new evidence and mitigating cognitive biases.

If teachers try to provoke students to think about daily experiences and then try to explore the subject contents from it then there are chances to improve our education system. Now a days, the projects and fairs are lacking the originality and more often supporting commercially expensive projects as all the things are readily available and so in most of the cases students are not attempting to make anything by their own. Teachers should check the methods of teaching, efforts in developing a positive and interesting atmosphere for students. Exploration and activity based teaching can develop a love for the subjects and build an atmosphere of rational thinking.

Teachers can provide effective atmosphere in the classrooms through the practice of creative thinking, problem-solving and logical thinking as they are the main constituents of rational thinking. The teachers should also be equipped to plan and transact lessons in order to improve the rational thinking of students. In order to equip the students to construct their own knowledge, it is the duty of the teachers to avoid the rote learning method. Through the process of rote learning the mugging up of contents is taking place. The aim of our education is to equip the individuals to gain the capacity to be creative and transformative, develop their abilities for thinking, reflections and producing knowledge rather than receiving it.

As far as a rational thinker is concerned he/she should possess some unique characteristics such as thinks about the future more than the past, always thinks in terms of goals and objectives, asks for the reasons first, often makes plans and follows them, lists the pros and cons when making decision, won't allow emotions to blind judgments etc. The teachers at the secondary level schools should be the role models for the students as at this stage, the teachers can teach the students not only the lesson contents for preparing them to pass the examinations but also to teach them how effectively they can channelize their rational thinking so that the future of our nation will become safe in the arms of our young buds.

The secondary school teachers can plan their lessons in order to cater the skills needed for enhancing the rational thinking of the students. They can teach the students by suitably incorporating the necessary modifications in the form of extrapolated learning. Through the provision of extrapolated learning in the regular classrooms along with the aim to improve the rational thinking can make the desired results so that

the students can be made capable of generating ideas or plans by themselves. Education should be productive rather than the passive learning.

Limiting the subjects to the textbooks and classrooms are unfair and we have to think seriously that school subjects are not only for producing doctors, engineers etc. but are also for producing rational thinkers and good human beings.

References

Adey, P., Robertson, A., & Venville, G. (2001). *Let's think!* Windsor: NFER Nelson.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching and assessing: a revision of Bloom's taxonomy of educational objectives*. New York: Longman.

Bloom, B. S. (Ed.). (1956). *Taxonomy of educational objectives- the classification of educational goals- handbook 1: cognitive domain*. London, WI: Longmans Green & Co. Ltd.

Ganesh, H. (2014). A study in human perception- Part II. *Executive Knowledge Lines*, 9 (12), 17-19.

Levine, D. (1981). Rationality and freedom: Weber and beyond. *Sociological Inquiry*, 51, 5-25.

Padilla, M. J. (1990). The science process skills. *Research Matters- to the Science Teacher*, No. 9004. Retrieved from <http://www.narst.org>.

Sreehari, S. V. (2012). *Identification of students' capabilities for excellence in competitive examinations*. Trivandrum: University of Kerala.

Richetti, T. C., & Tregoe, B. B. (2001). *Analytical Processes for School Leaders*. Retrieved from <http://www.ascd.org/publications/books/101017/chapters/Rational-Thinking-as-a-Process.aspx>

Wallas, G. (1926). *Art of thought*. London: Jonathan Cape.

Weber, M. (1958). *The protestant ethic and the spirit of capitalism*. New York: Scribner's.