Promoting Metacognition in Gifted Learners

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Introduction

On a recent visit to Singapore, gifted education specialist Dr. Nora Maier, a director at the Faculty of Education in the University of Toronto and past president of the World Council for Gifted and Talented Children, praised Singapore for teaching students how to think (The Straits Times, 1994, p. 3).

Her comments came in the wake of current concerns among educators in Singapore to develop students into good thinkers. In the last few years, many educators have come to recognize that students in our schools do not think as skilfully and critically as we might wish. Students are unable to answer higher level questions on tests or perform well on complex academic tasks. There are fears that if this is left unchecked, schools will produce a generation of students who know the examination syllabus inside-out, but who lack problem-solving skills and are incapable of original thought. Hence, in recent years, the concept of teaching thinking and developing an awareness of one’s learning has generated much interest among educators in Singapore.

What is Metacognition?

The term “metacognition” means an awareness of one’s thinking or cognition. Essentially, metacognition involves two components. The first component, knowledge about cognition, refers to an individual’s awareness of personal strengths and weaknesses as well as the requirements of the task or learning situation.

The second component is the more observable aspect of metacognition, namely, the regulation of cognition. This comprises the activities of planning, monitoring and revising.
Research on metacognition has become more widespread in the last few years. However, studies focusing on both giftedness and metacognition are only just beginning to trickle in. In the area of children’s learning, self-appraisal of one’s thinking and self-regulation of one’s actions are often ignored and neglected. Metacognition deserves due emphasis as it helps learners play an active role in charting the course which learning must take so as to obtain desirable outcomes. Metacognition encourages self-evaluation and this helps to steer the learner away from passive learning.

Hence, while most programmes for the gifted emphasize intellectual ability and academic aptitude (Fox, 1981), even more can be done to maximize the potential of gifted students. Lee (1987) stressed that “if we are defensive about nurturing our best and encouraging the average to achieve more than what the average can do, we will not make progress.”

Metacognition and Giftedness

Do the gifted think and learn differently? Does giftedness imply superior metacognitive ability? Do gifted learners exhibit good information-processing skills? These are some of the questions which research in the area of cognition among gifted individuals seeks to answer.

Rogers (1986), in a thorough review of more than 20 studies on gifted children and adults during the 1975-1985 period, reported significant differences between gifted and non-gifted populations in the use of metacognitive skills. The gifted, for example, are more accurate in identifying the problem to be solved, and are better able to generate solutions and monitor the effectiveness of these solutions.

In a study of the mathematical problem-solving methods used by elementary school gifted students, Overtoom-Corsmit, Dekker and Span (1990) observed that gifted students took more time to orient themselves on the task, reflected before beginning the task and planned their approach. By comparison, the average students would
embark on the task immediately without adequate planning and without understanding what they are required to do.

Dover and Shore (1991), in a study on the performance of gifted and average children in upper elementary grades on a mathematical problem-solving task involving the ability to break a previously established pattern in order to solve problems, also found that gifted students display greater metacognitive awareness than average children.

Naturalistic studies on the gifted as in Bloom's (1985) study of 120 gifted and talented individuals across different specialist areas such as music, art, athletics, mathematics and science, endorse the fact that although some individuals attribute their giftedness to innate ability, most of them admit that practice and task awareness are instrumental in contributing towards their success.

Hence, both experimental and naturalistic studies have highlighted the superior metacognitive skills of gifted learners as compared to their average peers. What then are some implications for teachers of the gifted to further promote and enhance the skills of self-appraisal and self-regulation among gifted children?

**Implications for Teachers of the Gifted**

Engaging in metacognitive learning involves thinking about thinking, which requires abstract processing of thought. In many learners, including gifted learners, formal abstract processing of thought develops slowly and gradually from the early school years through adolescence and adulthood.

Teachers of the gifted in the primary school years can focus on developing a readiness for metacognition rather than on trying to teach students metacognitive thinking skills. For example, whenever an opportunity for decision-making presents itself such as where to go for an excursion or class outing, teachers can have students identify several options and then study the consequences of each option taken.
Students can also be encouraged to plan classroom activities or engage in project work or mini-assignments which require thinking about goals, procedures to take, problems anticipated and possible resources available. They can learn to monitor the progress of their work and evaluate the success of their outcomes. Getting students to paraphrase ideas, elaborate or reflect on their peer's answers also help to promote active learning.

In the secondary school years, teachers can focus on demonstrating metacognitive operations and discussing them with the class. When engaging in problem-solving, teachers can guide students through the problem by asking them to report how they arrived at a particular step, why a certain approach was adopted, how they could deal with problems encountered, what steps to take next and if there are better solutions to adopt.

Reciprocal teaching which emphasizes interactive communication between teacher and students centres on the strategies of predicting, questioning, clarifying and summarizing. These strategies are effective in monitoring reading comprehension.

Cooperative learning, in which students work together to complete tasks, helps to promote discussion among students. The exchange of ideas lends greater insight into the problem and paves the way towards better understanding and grasp of content. Gifted students are by nature more sensitive and critical of themselves. Hence, by encouraging these students to work in cooperative learning situations rather than under competitive instructional settings, teachers may help to motivate them and make them less anxious about the constant pressure to perform in a gifted classroom.

Conclusion

In the continual effort to maximize the potential of all gifted learners, perhaps educators of the gifted would be better advised to orient their teaching approaches and place more emphasis on developing good thinkers and skilful information-processors. It is only through encouraging gifted students to engage in metacognitive strategies that these students will develop the confidence and ability
to transfer their thinking skills from one situation to another and to make good progress in their life-long pursuit of learning. Courtenay (1989) best captures the essence of teaching for metacognition in a gifted education classroom, "In teaching me independence of thought, they had given me the greatest gift an adult can give to a child besides love, and they had given me that also" (p. 326).

References


