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ADAPTING GIFTED EDUCATION FOR ADVANCED LEARNERS IN MAINSTREAM CLASSROOMS

Review by Chua-Tee Teo

INTRODUCTION

Currently, the Gifted Education Programme (GEP) in Singapore only caters for about 0.7% to 1.0% of the intellectually advanced pupils in each age cohort. In the United States, gifted programmes are designed to enroll 2% to 5% of each age cohort. It is clearly evident that there exist many advanced learners in the mainstream classrooms in Singapore, not forgetting those few pupils who choose not to be in the GEP after being offered a place. Teachers in the mainstream need to look out for these advanced learners and make provisions to challenge their active minds before they become bored and disruptive.

While it may be true that good instructional strategies for the gifted may not be suitable for all learners, there is really no harm in adapting instruction and curriculum for the gifted to suit the needs of the more advanced learners in our classrooms. The aim of education is to realize potential. Collaborative efforts of general educators with gifted educators would serve to enhance the educational process and thus benefit more pupils. This article reviews recent research on curriculum differentiation, mainly in the GEP in Singapore, before examining the implications for adaptation of instruction for advanced learners in classrooms of the mainstream.

REVIEW OF RESEARCH

In the last three decades, the field of gifted

education has been grounded in teaching and learning principles proposed by cognitive psychologists. These include the provision of opportunities for the gifted learner to function at higher levels of thought; to learn basic skills in context; to experience student-centred learning; to make connections across disciplines; to solve real problems; to function like the professional in a given field; and to deal with ambiguities and fuzzy problems (Tomlinson, 1996). Many gifted educators, including Clark (1997), Montgomery (1996) and Vantassel-Baska (1993), have consistently maintained that these principles govern basic good teaching and learning.

In Singapore, the selection of pupils for the GEP takes place at Primary 3 and Primary 6 through screening and selection tests administered by officers at the Gifted Education Branch of the Ministry of Education. The curriculum for intellectually gifted pupils—designed by curriculum specialists and teachers in the GEP, is differentiated and enriched with respect to content, process, product and environment (Gifted Education Branch, 1998; Quek, 1997a). In addition, formal enrolment of pupils in research projects and mentorship programmes with scientists at tertiary institutions and renowned creative writers has enabled pupils to be challenged intellectually (Goh and Goh, 1996). Affective education in the GEP is comprised of an affective curriculum and counselling (Gifted Education Branch, 1998). Gifted pupils attend classes in moral education, national education, pastoral care

and are involved in community service projects. Moral, ethical, social and emotional issues have also been integrated into the various disciplines in the differentiated curriculum (Quek, 1997b).

Curriculum differentiation begins with the fundamentals in the regular or mainstream curriculum being taught to gifted pupils in depth and breadth (Gifted Education Unit, 1994). By including more abstract and complex concepts at higher levels of Bloom's taxonomy (1956), gifted pupils learn the basics in the syllabus in depth in a shorter time but in a more meaningful manner, commensurate with their mental ability (Rasanayagam and Tan, 1997). Ancillary topics and issues not required by the regular syllabus are then expounded to add breadth to the curriculum (Quek, 1997a). GEP pupils are usually guided to explore, derive or verify central concepts related to a given domain of subject matter rather than to regurgitate isolated and disjointed facts.

The teaching process in the GEP is differentiated with the teacher serving as a facilitator of learning rather than a dispenser of knowledge (Quek, 1997b). High-level critical and creative thinking have been characteristics of the learning process for GEP pupils (Teo, et al., 1997). A variety of instructional approaches as well as appropriateness of strategies have been witnessed in GEP classrooms (Teo, et al., 1997). The asking of thought-provoking and open-ended questions by teachers and peers is a common scenario. In fact, the more experienced teachers have been able to teach their pupils questioning techniques and metacognitive skills. The inquiry approach, a common phenomenon in the

GEP, is meant to encourage pupils to form hypotheses, make informed guesses and hence develop their inductive reasoning ability (Quek, 1997a). Group work and individualisation are often used to develop a spirit of cooperation as well as independent or self-directed learning. Games, field trips, simulations, investigations and experiential learning are used to generate enthusiasm among pupils.

As for product modifications, GEP pupils have been trained in research skills for project work both in school and with tertiary institutions (Gifted Education Branch, 1998). They are capable of identifying problems, addressing the problems with a repertoire of skills and methodologies, producing innovative and creative work, establishing challenging standards of success, and defending their work before knowledgeable and interested audiences. Just as provisions have been made to cater for varying abilities and learning styles in individualised instruction, a gradation of assignments with different difficulty levels, or different media of representation, is acceptable in the GEP.

The GEP learning environment is student-centred, active and responsive to learner interests and needs. The open and non-judgmental atmosphere is tolerant of divergence in opinions and ideas, and is accepting of many questions and proposed solutions. Risk-taking and problem-finding are rewarded while conformity is avoided (Quek, 1997a). Lessons are not confined to classrooms only. They can be conducted outdoors, in the school yard, in the library or, even at an external local or overseas organization—where learning is extended beyond the classroom into problems of the real world outside.

CONCLUSION

It must be noted, at this juncture, that neither intellectually gifted nor advanced learners are a heterogeneous group. There is no one-size-fits-all formula to satisfy their full range of needs. Teachers, therefore, need to modify and update

instructions for these pupils constantly. While there are essential commonalities between good instruction in general and good instruction for highly able learners, the difference is apparently in the existence of higher-order thought processes, both qualitatively and quantitatively.

IMPLICATIONS

While effective teaching strategies for intellectually gifted pupils in the GEP may not be identical to those for learners in the mainstream, it is believed that what worked for the gifted pupils may serve as a guide for curriculum differentiation for the more advanced learners in classrooms of the mainstream. An examination of theories on individual differences and multiple intelligences (Hafenstein and Tucker, 1995; Kanevsky, 1995; Hong and Milgram, 1996; Taylor, 1978; Gardner, 1983) reveals that the difference in potential between individual pupils is both in degree and in kind.

This difference in capacity and capability of one pupil from another is clearly evident in the classroom. For example, one pupil may be very good at mathematics and weak in the English language while another may be mediocre in mathematics but excel in English language. It takes a prudent teacher to adapt and modify existing curriculum and known strategies to suit the needs of each pupil. In fact, the key to adapting gifted education for the more advanced learners in classrooms of the mainstream lies in the knowledge of the developmental needs of the learner and the reflective and adaptive capability of a wise teacher.

In view of the research in gifted education cited above, classroom teachers teaching the top 20% of each age cohort in the mainstream may wish to consider the following suggestions when planning their teaching strategies.

1. Focus on key concepts, principles and skills of the subject matter in depth as far as the pupils can understand.

With regard to content, teachers of advanced learners, like educators of the gifted, may like to focus on concepts and principles central to a domain rather than on accumulation of isolated and disjointed facts (Tomlinson, 1996). Pupils may be guided to discover key concepts and principles rather

than to receive them as direct dispensation from the teacher. High-level critical and creative thinking strategies need to be incorporated into appropriate strategies of inquiry to stimulate bright young minds. Advanced learners need to be given opportunities to be cast as producers rather than as repositories of knowledge. The provision of subject matter which is 'rich' i.e. challenging, interesting, relevant and coherent, generally encourages advanced learners towards deep and abstract thinking (Teo, et al., 1997).

2. *Ask pupils more simple, open-ended and yet thought-provoking questions; and encourage pupils to ask each other questions.*

Conscious attempts by the teacher to provide opportunities for open discussion in the form of higher-order questions between teacher and pupil, and between pupil and pupil help to clarify thoughts, abstract concepts and hence learning. In fact, advanced pupils need to be taught questioning techniques and metacognitive skills so that they will be able to add to a question or a comment, agree, disagree, substantiate with evidence, or ask another question upon reflection (Teo, et al., 1997).

3. *Plan for individualised instruction.*

Although pupils in the mainstream may be classified as 'advanced', they are not homogeneous as a group. Besides, no two pupils are identical in their process of learning, even if they are homozygous twins. Therefore, teachers need to plan for *individualised* interaction time with each pupil to find out his or her needs and progress. It is only then that enrichment or remedial work for the pupil may be prescribed to suit optimal cognitive functioning. Differentiated assignments and independent project work will serve the purpose of fulfilling the needs of pupils with varying abilities, interests and learning styles (Gifted Education Branch, 1998).

4. *Plan for a greater variety of pupil-centred activities.*

As advanced learners are capable of higher level thought processes, teachers must avoid the use of didactic approaches of instruction (Montgomery, 1996). The use of a greater number and variety of pupil-centred activities, like experiential instruction, discovery learning, field trips, cooperative groupings, multimedia and computer interactive modes of learning and research work, will be beneficial to these pupils. The teacher naturally assumes the role of a facilitator of learning with pupil-centred activities (Gifted Education Branch, 1998).

5. *Encourage multiple modes of expression of ideas and products.*

Pupils can also demonstrate understanding of subject matter through 'products'. Other than written assignments, advanced learners may be asked to give creative expression of their higher level thought processes in various forms and involving different media. Wherever possible and feasible, advanced pupils must be encouraged to identify and address real problems with a range of appropriate methodologies (Tomlinson, 1996). These pupils could present their work using audio-video presentations, computer simulations, musical compositions, raps, songs, displays, dioramas, poems and dramatic presentations (Quek, 1997a).

6. *Create a non-judgmental, open and warm classroom atmosphere where divergent and creative viewpoints are acceptable.*

The establishment of an open, accepting and non-judgmental classroom environment is essential for divergent and creative ideas to flourish from advanced learners. Both teacher and pupils will be able to evaluate and comment on each other's viewpoints as new ideas are tolerated and risk-taking is encouraged under such circumstances.

For the more advanced learners, the teacher may like to use more of the discovery-inquiry mode of instruction, provide individualisation like allowing for more rapid-pace learning or teaching pupils to research on a topic of interest and thus mentoring them. The teacher may also like to encourage them to problem-find and to extend learning beyond the classroom. The formation of personal relationships with these learners enables the teacher to understand and facilitate their social, emotional and moral development.

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