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Nurturing Giftedness of Students in Schools: A Curriculum for Talent Development

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The notion of developing a curriculum for talent development to nurture the gifts and talents of students in Hong Kong is explored through an overview of two exemplary curriculum models in gifted education and their applications in the Chinese Mainland and Hong Kong. It is suggested that a balanced and articulated curriculum for talent development could be designed to incorporate acceleration and enrichment options as in the talent search model and the schoolwide enrichment model. The importance of considering the social-emotional needs as well as the learning needs of students and evaluation research in curriculum development is emphasized.

Key words: curriculum; talent development; Hong Kong

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The current Hong Kong education reform movement starting in the 1990s has been driven by diverse societal concerns. Included in these concerns are our changing demographics, the need for a different workforce for the information era, the declining student competency and performance, and the negative international education comparisons with other countries such as the 1995 Third International Mathematics and Science Study (Chan, 2000; Education Commission, 2000). Similar reform movements elsewhere have also assumed global significance, as most countries acknowledge the importance of education and link their future economic hopes to an educated and technologically skilled citizenry.

Thus, there is a strong interest in focusing efforts on raising the level of performance for all students. Increasingly, it is also believed that, to achieve optimum level of learning, all students should be provided with appropriate challenge through an organized curriculum, which could be one of the key factors in transforming a student's capacity for intellectual activity into a mature competence for academic and professional accomplishment (VanTassel-Baska, 1994, 2000).

The New School Curriculum

With this view, the Curriculum Development Council has conducted in 1999 and 2000 a holistic review of the Hong Kong school curriculum in parallel with the review of the education system undertaken by the Education Commission (2000). On the basis of the review, the Curriculum Development Council (2001), in line with the overall aims of education as stated in the report of the Education Commission (2000), makes recommendations for changes in the school curriculum to enable students to attain whole-person development and lifelong learning. In particular, to provide all students with essential lifelong learning experiences for whole-person development in the domains of ethics, intellect, physical development, social skills, and esthetics, the Curriculum Development Council develops a curriculum framework with three interconnected components (Key Learning Areas, Generic

Skills, and Values and Attitudes) as the basic structure for learning and teaching throughout different stages of schooling. More specifically, the new school curriculum will be organized around eight Key Learning Areas or knowledge domains that provide the context for the development and application of nine generic skills that are essential for acquiring, constructing and communicating knowledge, and a set of positive or prosocial values and attitudes. Particularly worthy of note is the move to abandon the notion of curriculum as prescriptive syllabus and to adopt the notion of an open curriculum framework that allows for different interpretations of contents and flexible use of different learning and teaching strategies to meet the learning needs of individual students.

Along this line, individual schools are encouraged to develop their own school-based curricula to suit the needs of their student populations, and to promote effective learning and teaching through four suggested key tasks, that is, moral and civic education, reading to learn, project learning, and using information technology for interactive learning (Curriculum Development Council, 2001). While the new curriculum framework might readily accommodate for learner differences, the need for providing appropriate challenge to individual students to nurture their gifts and talents as well as to raise the performance of all students has to be addressed in the development of the school-based curriculum in each individual school.

Curriculum for Gifted Students

Traditionally, discovering and nurturing gifts and talents in students has been the major task of practitioners in gifted education. In recent years, the curriculum process has been shaped not only by social, political, and economic forces within educational systems, but also by new conceptualization and research studies about intelligence and how children learn as well as new ways of thinking about nurturing our best learners in schools (e.g., Gagne, 1995; Gallagher & Gallagher, 1995; Gardner, 1983, 1993, 1999; Piirto, 1999; Sternberg & Davidson, 1986). Despite these changes, curricu-

lum planners in gifted education continue to be concerned with learner outcomes that emphasize advanced and enriched contents, higher-level thinking and conceptual understanding, authentic and multiple modes of instruction and assessment, and students' use of cognitive and metacognitive strategies, and diverse resources as well as technological applications (Maker & Nielson, 1995; VanTassel-Baska, 1994, 2000). In this regard, the principles of gifted education curriculum development have much in common with curriculum development efforts in general education and the general approaches to curriculum reform (Shore, Cornell, Robinson, & Ward, 1991; Shore & Delcourt, 1996).

Thus, it seems natural to suggest that successful approaches to the achievements of gifted learners might help enhance the educational experiences of the less able, and that curriculum planned for gifted students should be used in our schools with as many students who can benefit from it (Feldhusen, 1998; Renzulli, 1998). Indeed, it has also been suggested that through appropriate curriculum design and delivery for the top five or ten per cent of the population, the whole of curriculum of general education can be upgraded and enhanced, and the curricular work for gifted students can spearhead higher standards and more rigorous methodologies in addressing the needs of the rest of the student body (e.g., Winner, 1996). Thus, general curriculum planning and curriculum planning in gifted education are complementary, and have a lot to learn from each other. Consequently, our current curriculum reform perhaps should aim for nothing less than a curriculum for talent development based on our informed experiences and practices of curriculum development for gifted and talented students.

In developing curriculum for gifted and talented students, it is generally agreed that the curriculum should be differentiated from that offered to other students, and that curriculum experiences for gifted students need to be carefully planned, developed, evaluated, and revised to maximize the potential effect (Gallagher & Gallagher, 1995; VanTassel-Baska, 1994). The rationale is that gifted students have specific learning needs, including their ability to learn at a faster pace, to think more abstractly about content that is

challenging, to think productively, critically, and creatively, and to constantly and rapidly increase their store of factual and procedural knowledge. Considering that these specific needs might cut across cognitive, affective, social, and esthetic areas of curriculum experiences, the curriculum for gifted students needs to be designed or adapted from the regular curriculum to accommodate these needs. The current view suggests that a confluent approach that allows for accelerated and advanced learning as well as for enriched and extended experiences might best meet the needs of gifted students (Schiever & Maker, 1997).

Specifically, based on acceleration principles, there are programs starting in North America, such as the International Baccalaureate Program and the College Board Advanced Placement Program, which represent approaches or curricula designed to promote readiness for college or university work, speeding up and shortening the process for the most capable (VanTassel-Baska, 1998). Such approaches tend to emphasize content knowledge that frames disciplines of study. The underlying belief is that the structure of knowledge is embodied in the organization of academic and artistic fields of inquiry, and students need to be instructed within those content disciplines.

On the other hand, the enrichment view regards constructs such as creativity, motivation, and independence as crucial for the development of high ability, and therefore tends to see process skills such as critical thinking and creative problem-solving as central to learning experiences (Maker & Nielson, 1995; Renzulli, 1986). In this approach, the choice of content could be incidental, as curriculum materials could be adopted and organized around major issues, themes, and ideas that define real-world applications for critical thinking, creative thinking, problem-solving, and higher-order thinking skills. Implicitly, this view assumes that learning cognitive and metacognitive skills will enhance any field of inquiry a student may encounter. Typically, such enrichment approaches also value highly quality products and performances as evidence of student work.

Two Exemplary Curriculum Models

As curriculum is central in designing program activity for the gifted, one needs a viable curriculum model that provides a system for developing and designing appropriate curriculum for the target population of gifted learners. In this connection, VanTassel-Baska (2000) has outlined some key criteria that make a curriculum model viable. Specifically, the model has to be utilitarian in that it can be easily applied to all major areas of school-based learning. It has to be flexible in respect to age groups, considering that the central elements need to work for kindergarten children as well as high school students. It also has to have relevance in multiple locations and learning settings, working in tutorials as well as large classes. Finally, it has to differentiate the particular needs of the gifted population for curriculum and instruction.

In the past three decades, numerous viable curriculum models have emerged (Davis & Rimm, 1998; Maker & Nielson, 1995), with different emphases on acceleration and enrichment approaches. Two exemplary models representing the typical programmatic division of the two approaches are the Talent Search Model and the Schoolwide Enrichment Model. Both models have enjoyed widespread use and research attention, and have over a decade of research, development, and implementation behind them (see Benbow & Lubinski, 1997; Renzulli & Reis, 1994). Knowledge of these two models might provide insights into developing an integrated curriculum for nurturing gifts and talents of students in Hong Kong schools. A description of the two models follows.

The Talent Search Model

The founder of the Talent Search Model is Julian C. Stanley of Johns Hopkins University (Stanley, 1991). It is a model for the discovery and development of academic talent, and the overall purpose is to educate for individual development over the lifespan (Assouline & Lupkowski-Shoplik, 1997; Benbow, 1986; Benbow & Lubinski, 1997). Two steps are involved in the

discovery of students who are exceptionally able academically. The first step is the identification of students who have demonstrated a high level of academic performance, as documented by high performance on grade-level tests (e.g., 97th percentile). The second step is to determine these students' potential for academic challenge by out-of-level testing, that is, testing them with tests above their grade levels (usually two years).

Initially, the interest was in finding adolescents who were exceptionally talented in mathematics, so the mathematics section of the Scholastic Aptitude Test (SAT-M) was used as a measure of students' mathematical reasoning abilities. Later, the Verbal section of the SAT (SAT-V) was also used to identify verbally talented youths. After the revision and renaming of the SAT as the Scholastic Assessment Test (SAT I), the SAT continues to serve as the testing instrument that taps into high-level verbal and mathematical reasoning to identify students. In addition to the SAT I, another college entrance exam, the American College Testing Program (ACT) was also used. Over the years, the Talent Search Model has been adopted in different regional centers in the US, and outside North America, extending from identifying academically talented students at the junior high level to those of the elementary level using tests such as the Secondary School Admission Test (SSAT), the PLUS Academic Abilities Assessment, and the EXPLORE (see Assouline & Lupkowski-Shoplik, 1997; VanTassel-Baska, 2000). For the identified students, educational facilitation is provided by utilizing acceleration or curricular flexibility and by developing fast-paced academic programs.

The application of the model has been most successful in the US in after-school and summer settings in which students complete the equivalent of high school honors classes in a short period of several weeks (Olszewski-Kubilius, 1997). Of special interest is the application of this model or its equivalent approach in the Chinese Mainland (see Shi & Zha, 2000).

The Schoolwide Enrichment Model

The School Enrichment Model (SEM) was developed by Joseph S. Renzulli

of the University of Connecticut (Renzulli, 1994). It combines two previously developed models, the Enrichment Triad Model (ETM; Renzulli, 1976) and the Revolving Door Identification Model (RDIM; Renzulli, Reis & Smith, 1981).

The ETM offers three types of enrichment experiences appropriate for students in the school talent pool identified as having high levels of ability, interest, and task commitment. These experiences are designed to encourage students' creative expression and productivity. Type I Enrichment provides general exploratory experiences such as lectures by guest speakers, field trips, demonstrations, performances, interests and hobbies, the use of audiovisual materials, and other events designed to expose students to new and exciting topics, ideas, and fields of knowledge not ordinarily covered in the regular classroom. Type II Enrichment provides group-training activities using instructional methods and materials purposefully designed to promote the development of thinking and feeling processes. In general, training is in the areas of creative thinking, problem-solving, communication skills, and skills in learning to learn. Type I and Type II activities can also be offered to all students in the school, as they will benefit all students. Type III Enrichment is defined as individual or small group investigative activities and artistic productions selected and pursued by students who are willing to commit themselves to acquire the advanced content and process training. Each participating student will assume the role of a first-hand inquirer, and think, feel, and act like a practicing professional.

The RDIM introduces the notion that students are selected for participation in the talent pool on the basis of multiple criteria that include the use of achievement test scores and different indices of creativity as well as teacher-, parent-, and self-nomination. These students are also observed in classrooms and enrichment experiences for signs of advanced interests, creativity, or task commitment to become involved in Type III creative productivity. Identification continues year round rather than being confined to the beginning of the school year. Thus, by operating RDIM in

conjunction with the ETM, the SEM adopts a more flexible approach to identifying high-potential students, resulting in a talent pool of 15% to 20% of the school population. In this manner, a student with high achievement test and IQ scores will be automatically considered, enabling those students who are underachieving in their academic schoolwork to be included in the talent pool.

Students in the talent pool are eligible for special services that include assessment on students' abilities, interests, and style preferences, resulting in a Total Talent Portfolio for each student, and curriculum compacting. The Total Talent Portfolio records the assessment of students' strengths that provide the foundation for effective learning and creative productivity. Curriculum compacting, on the other hand, ensures a better match between the achievement levels of individual students and the school curriculum through modifying the regular curriculum by eliminating portions of previously mastered content and by substituting with alternative work.

The SEM has been widely adopted in schools in the US and internationally in some forms (see Renzulli & Reis, 1994). Educators in Hong Kong, in looking for a suitable model for school-based enrichment programs, have also found the SEM appealing. The current operation of school-based enrichment programs by the Education Department can be seen as variations of the SEM (Education Department, 2000).

Talent Search in the Chinese Mainland

While there has not been any straightforward adoption of the Talent Search Model in the Chinese Mainland, an equivalent approach for educating academically gifted students was introduced in Beijing starting in 1978. The following information on talent search in China is largely drawn from reports and studies in Zha (1998) and Shi and Zha (2000).

Specifically, a special class of thirty gifted students (11 to 16 years of age) from different provinces across the country was set up in the

University of Science and Technology of China in Beijing in 1978. This started a trend of establishing special classes for gifted students across the countries, and 12 universities, including Beijing University, Qinghua University, Beijing Normal University, Xian Jiaotong University, started setting up their own special classes for gifted adolescents in 1985. While these students had early admission to university education, they did not enrolled as other undergraduates until two to three years later, and completed their university undergraduate studies in another two to three years.

The year 1985 also witnessed the downward extension of special classes for 10-year-old gifted students at Beijing No. 8 Middle School where gifted students are provided with the acceleration option of completing their eight-year schooling in four years. In 1994, special classes for students talented in mathematics, computer science, physics, chemistry, and English were also established in a Middle School, the Hua Luo Geng School, within the campus of the Middle School Affiliated to People's University of China. Parallel to this "school within a school" notion, starting in 1992, four National Science Experimental Classes were set up in middle schools affiliated to Qinghua University, Beijing University, Beijing Normal University, and Normal University of Eastern China. The four classes admit 80 boarding students selected from junior high gifted students all over China. During the three-year program, these students are also expected to enroll in credit-bearing courses concurrently at the affiliated university.

There is also an extension to the primary school level. A special class for 6-year-old gifted students was set up in Beijing Yumin Primary School in 1995. Students are expected to complete primary education in four years rather than the regular six years.

In summary, the talent-search approach in the Chinese Mainland mainly focuses on acceleration options for academically gifted students, and emphasizes the nurturing of gifts and talents in science and mathematics. Admission to these programs is competitive, and students have to pass rigorous testing.

School-based Enrichment Programs in Hong Kong

Unlike the Chinese Mainland, Hong Kong tends to incline toward the enrichment option in the provision of education for gifted students since the issue of the first policy statement in the fourth report of the Education Commission (1990). Although the report focused on the educational provisions for the academically gifted students, acceleration options were largely regarded as inappropriate at the time. The Commission recommended school-based enrichment options, perhaps partly because of the rigidity of the education system that prescribed a common curriculum and syllabus for public examinations with no provision for grade skipping and early entry to universities, and partly because of the prevalent view against an elitist education that might be interpreted as contributing to the discrimination against the socially and economically disadvantaged groups of the society.

In the current curriculum reform, the Education Department (2000) proposes to implement three levels of services for students in Hong Kong schools, akin to the services implemented in the SEM. The first level of services is targeted for all students in school. This school-based level of services has a generic or general enrichment component and a specialized or knowledge-domain-focus component. In the generic component, higher-order thinking skills, creativity, and personal social competence will be immersed in the curriculum for all students in the regular classroom. In the specialized component, students will be appropriately grouped, and their learning needs will be met through differentiated teaching with enrichment and extension of curriculum across all subjects in the regular classroom. The second-level services are school-based pullout programs targeted for smaller groups of selected gifted students. These pullout programs conducted outside the regular classroom may be generic programs intended to allow systematic training of homogeneous groups of students with high ability, or specific programs for students with outstanding performance in specific talent areas. Finally, the level-three services are offered to exceptionally gifted students who require resource support outside their school

settings in the form of individualized educational arrangements such as counseling, mentorships, advanced placement, and early entry to universities.

Currently, a two-year pilot scheme encompassing the first two levels of services at 20 schools in the first year and 36 schools in the second year has been planned and implemented in stages, and will be evaluated at the completion of the scheme. A project under the name of "Support Measures for the Exceptionally Gifted Students" has also been implemented to conduct, mainly in collaboration with universities in Hong Kong, level-three services for exceptionally gifted students nominated by their schools. Most of these programs are enrichment programs to nurture leadership giftedness and to enhance student learning in specific talent areas of science, mathematics and information technology (Education Department, 2000).

In summary, Hong Kong has witnessed a decade of slow progress in gifted education since the issue of the first policy statement on gifted education in the report of the Education Commission (1990). While general school-based enrichment activities have been encouraged by the government through the publicized success experiences of schools in the pilot scheme, the majority of the schools have been slow in responding. Hopefully, the new school curriculum with financial support and human resources will help overcome this inertia.

Developing a Curriculum for Talent Development in Hong Kong Schools

In line with the Hong Kong reform on education system and curriculum, it is anticipated that there will be increasing acceptance of the new school curriculum designed and developed with the specific aims to nurture gifts and talents in students for their lifelong learning and whole-person development. In the past decade, Hong Kong has made progress in exploring enrichment options both within the school and outside the school settings. Admittedly, there is much to be learned from research of these school-based and pullout enrichment programs, and from the success stories of the exem-

plary practices of schools that base their curricula on models such as the SEM. However, a curriculum that does not incorporate features of accelerative learning is necessarily limited in its comprehensiveness. While some evidence indicates that enrichment-oriented programs are effective, the research evidence supporting the use of advanced curriculum in core areas of learning at an accelerated rate for high ability learners is more compelling (Kulik & Kulik, 1992; VanTassel-Baska, 2000). Perhaps, it is timely to consider other acceleration options for Hong Kong schools in the context of reform measures targeted at changing the education system, public examinations, and entry to universities.

In sharp contrast to the Hong Kong scenario, schools and universities in the Chinese Mainland have exclusively concerned themselves with the acceleration options for academically gifted students in the past two decades. This talent search acceleration approach certainly could serve as exemplary practices complementary to the Hong Kong enrichment approach. It remains for Hong Kong educators and practitioners to integrate the two approaches of acceleration and enrichment options into a balanced curriculum for talent development to optimize benefits for gifted and highly able students as well as for students who are less able.

Nonetheless, a balanced curriculum for talent development for all students is important, especially when one considers the diversity of abilities even within the broad spectrum of giftedness. Thus, the gifted students at the far end of the distribution of dimensions of giftedness, including that of intelligence, may require something different from what is provided for the gifted students who are only somewhat more superior in learning ability than the average student. While the learning needs of the average students might be met in school and school-based enrichment programs, and those of the generally gifted students might be met with similar provisions and with subject-content acceleration, the highly gifted students need more individual attention in the form of mentoring, acceleration, or planned independent studies and individual projects. Further, in considering the needs of students who are gifted in all cognitive areas in comparison to

those who are less globally gifted or gifted in a focused area, a balanced curriculum with flexible options will provide appropriate curricular experiences for specialized talented students as well as comprehensive services to the more globally gifted students.

In designing a balanced curriculum especially for academically gifted students, Piirto (1999) has a number of recommendations. First, the learning characteristics of precocity, complexity, and intensity of gifted students must be considered in the planning. Second, the curriculum should possess academic rigor. This might mean that assessment using authentic measures based on students' actual knowledge and performance as well as portfolios and creative products should be employed in addition to the conventional paper-and-pencil standardized testing. Third, the curriculum should be made thematic and interdisciplinary to allow students to define real-world applications and theoretical modeling within and across different areas of study. Fourth, the curriculum should be articulated in content, process, and thematic approach. Thus, advanced content knowledge should be made progressively more difficult in the planned sequence among and between grade or instructional levels of curriculum materials. Process skills, such as higher-order thinking and creative problem-solving, and issues, themes, as well as ideas should also progress. Finally, a more balanced and articulated curriculum can only be made possible if curriculum planners could plan with full awareness of the biases of different orientations that emphasize personal relevance, social adaptation and reconstruction, academic rationalism or advanced content, the development of cognitive processes, or behavioral and performance objectives (Eisner, 1994). Although curriculum planners are free to choose among the different curriculum orientations, the most effective curricula probably will incorporate all of them to some extent, dependent on the needs of the specific population of students they intend to serve. Thus, there might be diverse balanced curricula for different Hong Kong schools, integrating to different extent acceleration and enrichment options from, for example, the Talent Search Model and the SEM.

To end with a cautionary note, one must be reminded that an important aspect of a comprehensive balanced curriculum should also take into account the affective development of gifted students. These students need to come to an understanding and acceptance of their giftedness or exceptionality, their intensity and sensitivity of feelings, and their need for coping strategies to deal with perfectionism and vulnerability (see Chan, 1999). These needs can only be met with school counseling services, and a strong affective orientation to the curriculum delivered by teachers sensitive to the needs of gifted students.

Finally, the impacts of a curriculum for talent development on learning outcomes as well as nurturing gifts and talents of students need to be carefully evaluated in future research in the Hong Kong context. The infinite number of combinations of acceleration and enrichment options together with the wide spectrum of giftedness and talents in different knowledge domains certainly will testify to the complexity of the evaluation. Hopefully, the good practices of a balanced and articulated curriculum for talent development for Hong Kong schools will emerge through the continuous feedback between design and evaluation.

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