Research Paper

ROE

ECNU Review of Education
2020, Vol. 3(4) 632–658

DOI: 10.1177/2096531120967447
journals.sagepub.com/home/roe

SAGE ECNUP

Gifted Education in Hong Kong: A School-Based Support Program Catering to Learner Diversity

Ruby S. H. Cheung
The Chinese University of Hong Kong

Anna N. N. Hui
City University of Hong Kong

Alan C. K. Cheung
The Chinese University of Hong Kong

Abstract

Purpose: This study explores the contributions and effectiveness of the *Jockey Club "Giftedness into Flourishing Talents" Project* (Project GIFT) in supporting learner diversity in gifted education, including meeting the educational and psychological needs of highly capable and gifted students in Hong Kong.

Design/Approach/Methods: This study investigates the effectiveness of Project GIFT in supporting the development of diversity in learning in 20 project schools. Through close cooperation with project schools, Project GIFT comprised six developmental areas: school development, curriculum development, teachers' professional development, parent empowerment, student development, and financial support. To further assess the usefulness of the school-based support provided by Project GIFT, this study examines the implementation of school-based gifted education in two project schools based on the aforementioned components.

Findings: This study reveals Project GIFT's significant role in promoting school-based gifted education in Hong Kong schools. Indeed, it was the first cross-institutional and research-based

Corresponding author:
Alan C. K. Cheung, Department of Educational Administration and Policy, Jockey Club "Giftedness into Flourishing Talents" Project, Faculty of Education, The Chinese University of Hong Kong, Hong Kong SAR, China.
Email: alancheung@cuhk.edu.hk

educational program in gifted education that intervened at both Level 1 (whole class) and Level 2 (pullout) of the three-tiered policy stipulated by the Hong Kong Education Bureau. One of the few gifted education programs implemented in Asia, Project GIFT focused on six key components to specifically support high-ability and gifted students with diverse educational and affective needs. This study shows that Project GIFT significantly enhanced diversity in learning, its collaboration with two key schools resulting in the successful enhancement of school development, professional development, curriculum development, student development, parent empowerment, and financial support.

Originality/Value: The article fills the research gap by examining the effectiveness of a school-based gifted education program focused on enriching and differentiating curricula for different regular and pull-out programs. In doing so, this article attests to the success of the program in addressing the educational and psychosocial needs of gifted students at local schools in Hong Kong.

Keywords

Enriched and differentiated curricula, gifted education, giftedness, learner diversity, school-based curriculum, talent search and development

Date received: 7 April 2020; accepted: 25 September 2020

Introduction

Gifted students are characterized by exceptional learning abilities and aptitudes in a range of disciplines. Quickly mastering basic skills and concepts, such students demonstrate greater convergent and imaginative abilities, independence, and self-reflective behavior and an accelerated pace of learning (Feldhusen, 1982). However, gifted students possess special educational needs. Despite their higher academic performance, as well as leadership and creative capacities, many gifted learners are at risk of underachieving or becoming disengaged from learning if their educational needs are not met (Curriculum Development Council of Hong Kong SAR [CDC], 2009; Diezmann et al., 2003; Diezmann et al., 2004). A lack of learning opportunities and inflexible curricula typically result in gifted students becoming demotivated, bored, and frustrated—the failure to accommodate their learning styles and develop their strengths and abilities resulting in underachievement and psychological distress (Ministry of Education of New Zealand, 2002; Rayneri et al., 2003).

Catering to learner diversity through differentiation

Catering to individual differences and wide-ranging student characteristics presents a significant challenge to school teachers and managers. Indeed, students differ in terms of their learning styles,

motivation, abilities, needs, interests, developmental levels, language abilities, cultural backgrounds, and self-regulation approach (Rayneri et al., 2003; Tomlinson, 2001; Waldron & Mcleskey, 2001). A burgeoning field of research reflects the way in which school performance is challenged by learner diversity (George, 2005; Griggs & Dunn, 1984; Moore, 2005; Tomlinson et al., 2003). Expanding student diversity requires differentiated curricula, instruction, and assessment in classrooms comprising students with mixed abilities. In this respect, scholars agree that the traditional "one-size-fits-all" teaching approach cannot accommodate the diverse needs of students (Fox & Hoffman, 2011; Subban, 2006; Suprayogi et al., 2017).

Accordingly, scholars and educationalists have increasingly noted the need for differentiation—that is, "the process of making educational expectations match individual students' different learning needs" (Matthews & Foster, 2009, p. 112). An effective implementation of differentiated curriculum, instruction, and assessment would foster support for all students in regular, mixed-ability classrooms (Tomlinson, 2001; Tomlinson et al., 2003). This strategy has proven effective in serving gifted learners, particularly in heterogeneous classrooms (George, 2005). At the curriculum level, adaptations can be made by removing unnecessary or repetitive chunks of content, reorganizing or intensifying content, and connecting a unit of study to other subject areas or disciplines. At the classroom level, teachers can adopt flexible grouping based on students' strengths, interests, and weaknesses, thereby expanding the breadth and depth of their learning experiences (Wan, 2016).

Differentiation is integral in meeting the learning needs of gifted or talented students, who possess different abilities and talents. Their educational needs can be appropriately satisfied with accelerated, compacted, and advanced content, as well as enriched learning experiences, which facilitate the development of convergent and creative thinking abilities while encouraging the pursuit of loftier goals and independence (Feldhusen, 1982; Griggs & Dunn, 1984; Tomlinson, 1994; VanTassel-Baska & Stambaugh, 2005).

Gifted students also demonstrate distinct learning styles, thus requiring a diversity of educational offerings. Griggs and Price (1980) found that gifted children tend to be more "highly motivated than teacher motivated, prefer a quiet learning environment, and prefer to learn alone rather than with peers" (p. 116). Compared with their nongifted peers, gifted children tend to think at complex and abstract levels, master high-level materials, and respond well to challenges (Brody & Benbow, 1987). In addition, gifted learners prefer less structured and flexible learning, showing a highly persistent work attitude, but little responsibility or conformity.

The extant literature evidences the effectiveness of differentiated curricula, instruction, and assessment in addressing learner diversity. In addition to fostering higher achievements, learning outcomes, and student engagement, differentiation motivates learners' enthusiasm and maximizes their potential (Suprayogi et al., 2017). Differentiated instruction enables a more flexible and

effective approaches to learning and teaching resulting in teacher's varying learning contents, activities, and modes of assessment to accommodate the diverse needs of each student (Fox & Hoffman, 2011),

Challenges and obstacles in catering to learner diversity

Despite its advantages, several obstacles hinder the adoption of differentiation. One of the biggest challenges is related to teachers' subject knowledge and professionalism. For instance, VanTassel-Baska and Stambaugh (2005) argue that teachers' lack of content knowledge, pedagogical knowledge and skills, and classroom management skills significantly hinder their ability to implement differentiated teaching. Other factors impacting the success of differentiated learning include a poor understanding of how to accommodate approaches to learning for gifted students, as well as ineffective use of resources (Wan, 2017). Teacher's self-efficacy and beliefs in both their own abilities and differentiated instruction have also been found to impact the success of differentiated learning (Suprayogi et al., 2017; Wan, 2016).

Another obstacle to differentiated instruction is insufficient time, administrative support, and resources (Tomlinson & Allan, 2000; VanTassel-Baska & Stambaugh, 2005; Wan, 2017). Indeed, without sufficient time and resources to adapt the curriculum, instruction, and assessment, teachers "may feel frustrated and overwhelmed by the idea of meeting the needs of gifted learners" (VanTassel-Baska & Stambaugh, 2005, p. 215). In this respect, leadership support is essential to supporting the cognitive and affective needs of gifted children in regular classrooms (VanTassel-Baska & Stambaugh, 2005). Providing the necessary support, encouragement, and nurturing, school managers or leaders are particularly influential in preparing teachers to provide differentiated learning (Wan, 2017). In practice, school leaders provide direction for school development and enhancement.

Rising concern for learner diversity in Hong Kong

The introduction of the whole-school approach to integrated education and implementation of the New Secondary School (NSS) academic structure in Hong Kong has galvanized demands for schools to cater to student diversity (Wan, 2016; Wong, 2002). The new model of integrated education was introduced to address student diversity in regular classrooms. By enhancing respect for, as well as the understanding and appreciation of, individual differences among teachers, students, and parents, the strategy should expand learning outcomes and improve teaching effectiveness (Education Bureau of Hong Kong SAR [EDB], 2014). Meanwhile, implemented in 2009, the NSS academic structure ensures that all students have an equal opportunity to complete 3 years of secondary school education, thus resulting in greater learning diversity.

As every class is composed of students with varying "maturity, motivations, abilities, learning styles, aspirations, interests, aptitudes and socio-economic backgrounds," addressing the diverse needs of learners constitutes a key challenge in determining Hong Kong's learning and teaching objectives, content, levels, and methods (CDC, 2009). Based on the Senior Secondary Curriculum Guide (CDC, 2009), schools and teachers need to meet students' diverse needs by adapting the curriculum and mode of assessment at the curriculum planning, classroom learning and teaching, and student support levels. In catering to learners with special educational needs in a whole-class teaching setting, teachers are expected to offer greater learning opportunities and support to gifted students.

Gifted education in Hong Kong

The three-tiered model

Education should fully explore and develop the potential of gifted students through the provision of quality education (Education Commission Report No. 4, 1990). In 2000, Hong Kong adopted the three-tiered implementation model to promote gifted education in local primary and secondary schools. More specifically, Level 1 (L1) requires pedagogies to tap students' potential in terms of their creativity, critical thinking, problem-solving, and leadership abilities by integrating the three core elements of higher-order thinking, creativity, and personal–social competence into regular classroom teaching (Domain 1A). In addition, the specific needs of students demonstrating outstanding performance in individual academic subjects are catered for by enriching and extending the curriculum across all subjects, as well as differentiating teaching through the appropriate grouping of students (Domain 1B; EDB, 2019). Level 2 (L2) refers to school-based pull-out programs in subject or interdisciplinary areas for gifted students within the school setting. In this respect, pull-out differentiated curricula and programs are designed for students with specific talents or outstanding academic results (Domain 2C), as well as for students demonstrating outstanding performance in specific domains (Domain 2D; EDB, 2019). At Level 3, off-school support refers to the provision of learning opportunities for exceptionally gifted students in the form of specialist training outside the school setting (Domain 3E; EDB, 2019).

Accordingly, all schools should be committed to providing appropriate learning opportunities for talented and gifted students. The most favored approach to gifted students and the formulation of school-based gifted education provisions should "take stock of the available resources and to plan for long term, coherent and holistic provision for the gifted" (CDI, 2009, p. 10).

While all levels are equally important in developing the talent and capabilities of every child, particularly the gifted and talented, Level 3 has received greater emphasis in terms of policy initiatives. In 2006, the Hong Kong SAR government launched an initiative entitled "Support Measures for the Exceptionally Gifted." In its 2006 Policy Address, the government announced its

intent to create an academy for gifted education that would provide off-site programs for the gifted students, teachers, and parents. Consequently, the Hong Kong Academy for Gifted Education (HKAGE)—a government-funded organization—was established in 2008. In 2016, the government set up a Gifted Education Fund of HKD 800 million to support the Level 3 programs and services of the HKAGE.

As such, with the introduction of the whole-school approach to integrated education and the NSS academic structure, greater diversity of learning needs has emerged as the key challenge for educators. School-based gifted education curricula and support programs are essential to providing children with opportunities to develop their talents while catering for the diverse cognitive and affective needs of the gifted children.

In regard to teachers' capacity for gifted education, the Education Bureau of Hong Kong provides a wide range of professional development opportunities to enhance teachers' abilities to design and implement school-based gifted education programs and curricula. Nevertheless, the government has yet to mandate professional training on gifted education for school personnel—the absence of such professional requirements or training casting doubt on the effectiveness of school-based gifted education (Tommis, 2013). Many teachers struggle with learner diversity in their classrooms (Cheung & Yuen, 2017). In this respect, the lack of systemic professional training for school personnel and insufficient support for schools have hindered the development of gifted education in Hong Kong (Chan, 2001; Chan et al., 2009). As teachers play a vital role in nurturing the critical thinking, creativity, and collaborative skills of gifted students (Diezmann et al., 2004), enhancing teachers' capacity and competency is crucial to promoting gifted education (Rowley, 2012, Yuen, 2004; Yuen et al., 2018).

Another challenge to gifted education is the lack of well-developed evaluation measures regarding the effectiveness of school-based gifted education provisions. Callahan (2000) considers evaluation a critical and integral component of a gifted program. Effective research is urgently needed to review the success of interventionist programs for the gifted. Scholars also need to address the lack of assessment modes of student strengths and a talent search mechanism for school-based pull-out classes and programs. While the current school-based approach encourages schools to develop their own selection criteria, the psychometric properties of the selection instruments remain unknown. It is important that the developed tools and observation checklists are in line with the modern development of gifted education, with research providing references for schools.

Previous studies have reflected the several challenges to gifted education in terms of comprehensiveness, connectedness, and research-based input. Gifted education policy is hardly fully-fledged. Indeed, primarily provided in enrichment programs, gifted education is not a necessary requirement for teacher development and lacks evaluation guidelines. These missing pieces have

created a disconnection among policies, programs, and practices, particularly there is no indicator of implementation or quality. Insofar as gifted education policies should be grounded in research-based best practice and congruent with new research findings, researchers should focus on investigating the reliability and validity of the instruments and methods utilized, as well as the efficacy of the three-tiered models, including the school-based model.

Significance of the study

Despite rising concerns regarding schools catering for the education and psychological needs of gifted and talented students, a review of the literature reveals a limited scope of research related to school-based gifted education provisions and services—especially at L1 (whole class) and L2 (pullout) in the Hong Kong educational context. This study addresses these gaps by reviewing the success of the *Jockey Club "Giftedness into Flourishing Talents" Project* (Project GIFT) in coping with diversity in learning at two schools in Hong Kong.

Although the three-tiered implementation model has been advocated and implemented by the Education Bureau since 2000, many Hong Kong teachers still struggle with the differentiation strategies and skills required to support and nurture creativity. Indeed, many teachers believe that students' creativity cannot be enhanced (Chan & Yuen, 2015). Yuen and Westwood (2001) found that Hong Kong teachers are inclined to believe that catering to the specific needs of gifted children in mixed-ability classrooms is impractical. As one of the few gifted education programs in Asia, Project GIFT served as a pioneer in the provision of effective gifted education support to schools in terms of curriculum programs, as well as the establishment of supportive school-based gifted education policies, talent search and development, and teacher development. As such, this article contributes to the promotion of school-based gifted education by identifying and evaluating the successful implementation practices of Project GIFT.

Project GIFT

To address the aforementioned concerns and promote school-based talent development and gifted education in Hong Kong, the Hong Kong Jockey Club Charities Trust donated some HKD 48 million in sponsoring the Project GIFT. The Project was launched by the Center for University and School Partnership under the Chinese University of Hong Kong's (CUHK) Faculty of Education. Running from November 2016 to January 2020, this 3-year gifted education project was a cross-institutional effort by research investigators from the CUHK, the Hong Kong Polytechnic University, City University of Hong Kong, and the Education University of Hong Kong. The Project took an instrumental step in providing school-based professional collaboration with local schools in developing enriched curricula for students in regular classrooms, as well as differentiated curricula and pull-out programs for high-ability and gifted students.

Aims of the project

In accordance with the gifted education policy and three-tiered gifted education implementation framework established by the Hong Kong Education Bureau, Project GIFT offered L1 and L2 school-based gifted education provisions. It specifically sought to develop the capabilities and talents of every student, as well as nurture talented and gifted children. The Project's aims can be summarized as follows:

(1) To bring out the best in every student and enhance the strengths and capabilities of all students by developing a local school-based talent search model and an appropriate curriculum model.
(2) To nurture gifted and talented students and facilitate their whole-person development and positive well-being through school-based/pull-out differentiated curricula and programs.
(3) To enhance the professional competence of school personnel in talent development and gifted education in schools.
(4) To provide intensive support to 20 project schools—namely, 15 primary and 5 secondary schools—in the implementation of school-based gifted provisions.
(5) To conduct research in gifted education, including the assessment of the needs and challenges of gifted students and their teachers, as well as evaluate project models and school-based practice to inform future practice and school-based gifted education policy.

Purpose of the study

This study examines the achievements and value of Project GIFT in addressing the issue of learner diversity in gifted education in Hong Kong, focusing on the experiences of two key schools. As school-based professional support for project schools was in progress at the time of research, this study collected qualitative comments from teachers involved in the project during the interim review in the Summer of 2018.

Project implementation in two schools

To promote gifted education implementation and cater for the diverse needs of students, Project GIFT was launched to enhance the strengths and capabilities of all students through the development of a local school-based talent search model and an appropriate curriculum model. In doing so, Project GIFT provided intensive and continuous professional support and financial resources to 20 project schools—specifically, 8 key schools and 12 network schools—for 2 years (September 2017 to August 2019). The Project focused on the following six components: school development, curriculum development, teachers' professional development, parent empowerment, student development, and financial support.

This study examines the address of these six focal areas in two key schools—School A and School B—to show how Project GIFT collaborated with schools in responding to the increasing demand for schools to cater to learner diversity. These case studies place particular focus on the Project's attempts to meet the diverse educational and affective needs of students in regular Chinese Language (primary) and Mathematics (secondary) classrooms.

School characteristics

School A is a popular government subsidized primary school in a district with a median monthly household income of HKD 24,000—somewhat lower than the Hong Kong average of HKD 28,000 (Census and Statistics Department, 2018). The majority of the teachers (80%) have 10 or more years of teaching experience. The school comprises a total of 30 classes, with 5 per grade. The school's mission is to provide "an all-round, holistic and student-oriented education" and to cater for learner diversity through a school-based curriculum. Study participants comprised 164 students from Primary 3 (aged 8–9) regular Chinese Language classes (L1), as well as 14 students exhibiting higher proficiency in a Chinese Language pull-out program (L2).

School B is a prestigious government-subsidized secondary school in a district with a monthly household income of HKD 29,500—approximately 5% above the Hong Kong average. Approximately 77% of teachers had 10 or more years of teaching experience. The school comprises 24 classes, with 4 classes per grade. School B provides "whole-person, quality education based on biblical truths in the moral, intellectual, physical, social, aesthetic and spiritual aspects to encourage pursuit of excellence." Study participants comprised 130 Secondary 3 students (aged 14–15) from regular Mathematics classes (L1), as well as 14 students exhibiting greater Mathematical aptitude in a pull-out program (L2).

The Primary 3 students ($n = 164$) of School A were administered the four measures: (a) a nonverbal reasoning test—Raven's Standard Progressive Matrices (Raven et al., 1987); (b) a creativity test scoring ideational fluency—items on alternate use adapted from Wallach–Kogan Creativity Tests (P. C. Cheung et al., 2004); and (c) a student questionnaire consisting of multiple intelligences—Student Multiple Intelligence Profile (Chan, 2003a, 2003b), gifted characteristics and traits—Gifted Characteristics Inventory (Shek et al., 2019), general self-efficacy—General Self-Efficacy Scale (Chan, 2002, 2007), psychological well-being—Psychological well-being scale (Chan et al., 2019), and satisfaction with life—Satisfaction with Life Scale (Chan, 2012); and (d) subject ability in Chinese Language. Using the school-based talent search database, School A tailored its own L1 and L2 curricula and learning activities to meet the different needs of students in accordance with student characteristics, psychological well-being, and language proficiency.

For School B, the Secondary 3 students ($n = 130$) were administered the four similar measures as those used in School A above, except that Raven's Advanced Progressive Matrices (Raven et al.,

1987) was used as nonverbal reasoning test to match the age of the participants and subject ability in Mathematics to match with the chosen subject for school-based enrichment programs. Using the school-based talent search database, School B tailored its L1 differentiated instruction and L2 pull-out programs to cultivate the diverse mathematical abilities of its students.

School development

Project GIFT facilitated the schools' abilities to cater for learner diversity, contributing significantly in terms of school development and gifted education policy. In this respect, the Project played an advisory and collaborative role in addressing the diverse needs and characteristics of students by conducting documentary reviews, refining the school-based talent search and development model, and aligning the schools' gifted education policies with their development plans.

At the beginning of the Project period, Project GIFT collaborated with School A's Gifted Education Task Force in reviewing the Three-Year School Development Plan (SDP) (2017–2020), school-based gifted education policy, and the direction of collegial collaboration. Based on the SDP, teachers' professional development became one of the main directions of school development, with the demand for diversity in learning continuing to grow over the 3-year period.

A Strength-Weakness-Opportunity-Threat analysis conducted by the Chinese Language Department identified the wide spectrum of individual differences as a key weakness; for instance, some of the students were weak in language foundation. Consequently, with the professional guidance and support of Project GIFT, four strategies were initiated in the Three-Year SDP of the Chinese Department to address learner diversity in Chinese Language. First, the school suggested using information technology (IT)—such as iPads—to enhance students' learning motivation. Second, it planned to develop the L1 gifted education curricula at all levels. Third, it collaborated with the Hong Kong Education Bureau to develop enriched curricula (L1 gifted education) for Primary 3 and 4. Fourth, the school aimed to refine the existing Gifted Education curriculum, with particular focus on the enhancement of students' writing abilities.

The Project also promoted the sustainability of gifted education at individual schools. Under the Project's guidance, the school refined and uploaded its gifted education policy onto the school website. The school policy outlined the rationale and aims of its gifted education initiative, its definition of giftedness, the identification of gifted students and target groups, the formation of the Gifted Education Task Force and its function, curriculum requirements, and the arrangement for school-based gifted education. The policy also outlined teachers' professional development inside and outside school, as well as the monitoring and evaluation of student progress.

Similarly, Project GIFT collaborated with School B's Gifted Education Task Force in reviewing the Three-Year SDP (2018–2021) and refining the gifted education policy, resulting in the development of strategies to respond to diversity in learning. In terms of student support, the school

strived to create a high-quality formal and informal curriculum that met the diverse needs, abilities, interests, and learning styles of students.

Regarding talent development, the school emphasized multiple types of intelligence. According to Gardner (1983, 1999), intelligence is not a unitary concept but comprises various dimensions—namely, linguistic, logical-mathematical, spatial, musical, bodily kinesthetic, interpersonal, intrapersonal intelligence, as well as spiritual, moral, and existential intelligence. In practice, the concept of multiple intelligences corresponds with the Confucian educational ideal of promoting students' balanced development in the ethnical (de), intellectual (zhi), physical (ti), social (quan), and aesthetic (mei) domains (Chan, 2008). Students' needs and talents were thus diversified—the provision of stimulating and nonjudgmental learning and teaching environment providing opportunities for students to unlock and develop their potential. As such, the implementation of school-based gifted education motivates teachers to respond to diversity in learning in their classrooms.

School B also outlined its commitment to supporting learner diversity in the SDP. In the domain of curriculum and assessment development, the school clarified its address of learner diversity through the curriculum plan, as well as its homework and assessment policy, with different modes of assessment employed to measure students' performance. To enhance learning outcomes, teachers offered formative feedback and adopted breakdown strategies catering to learner diversity in assessment. Accordingly, the school recognized the importance of the early identification of students' needs, promotion of a culture of integration, as well as close collaboration with parents.

To ensure the sustainability of gifted education at School B, Project GIFT guided the school in fine-tuning its school-based gifted education policy. As noted in Project's June 2018 School Visit Report, the school's management and frontline teachers had identified the various affective needs of gifted and higher-ability students. Based on its existing strengths and effective collaboration with the Project, School B focused on teachers' capacity building and the implementation of differentiated teaching in three academic years.

Finally, Project GIFT played an instrumental role in developing a school-based student and talent database for School B. Together with curriculum adaptation and grouping strategies, this database enabled the school to conduct talent search and development to challenge and satisfy the different needs of students exhibiting higher mathematical abilities.

Professional development

Teachers' professional development

Project GIFT played a leading role in advancing teachers' knowledge of gifted education and enhancing their skills in handling high-ability and gifted students. In February 2017, the teaching

staff of both schools participated in academic lectures by renowned overseas scholars and pioneers in the field of gifted education. In February 2018, teachers participated in thematic seminars and workshops. To develop creativity and to cater for the affective and emotional needs of gifted learners, teachers attended the *Joint School Staff Development Programs on Creativity and Affective Education* in November 2018 and March 2019, respectively (R. S. H. Cheung, 2019).

In addition to centralized professional training, the Project collaborated with and supported the schools in enhancing teachers' professionalism. In February 2019, the *Gifted Education Teachers' Workshop* was arranged for the Chinese Language subject teachers at School A. This workshop possessed three objectives: first, to deepen teachers' understanding of the advantages of gifted education; second, to enhance teachers' abilities to incorporate the three elements of gifted education—namely, higher-order thinking, creativity, as well as personal and social competence—into Chinese Language classrooms; third, to advance teachers' capacities to address diversity in learning by ensuring a sound grasp of relevant learning and teaching strategies.

Project GIFT similarly collaborated with School B to enhance teachers' professional competence and confidence in promoting school-based gifted education in Mathematics classrooms. Held in March 2018 and open to all teachers, the Staff Development Program proved effective in enhancing teachers' professionalism, with the majority of teachers reporting an improved understanding of the rationale and concepts of gifted education. Significantly, many of them realized the importance of addressing the cognitive and affective needs of gifted students.

Local professional exchange

To facilitate the formation of a professional learning community, within which teachers and school personnel shared good school-based practices and engaged in professional discourses, the Project collaborated with the two key schools in organizing joint-school lesson observations for all students enrolled in the Level l enriched curricula and the gifted and talented students enrolled in L2 pull-out programs in the past 2 years. The two schools arranged joint-school lesson observations and post-lesson discussions with the other project schools for their respective subjects. Evaluation results evidenced the value and effectiveness of the programs. More specifically, the sharing of the Chinese Language class (L1) by School A was greatly appreciated by the participating teachers. All teachers ($n = 26$) from other project schools agreed that the program helped them understand how to incorporate the core elements of gifted education into Chinese Language classrooms. The initiative convinced participating teachers of the essential role of gifted education in providing opportunities to develop students' potential and talents. The event also provided teachers with the opportunity to experience the importance of Chinese Language teaching in nurturing creativity, as well as the moral and affective education of students. Significantly, all participants found the

professional exchange inspiring and helpful in motivating them to design and promote a whole-class gifted education curriculum (L1).

Positive feedback was also received from School B, with all teachers claiming that the event helped them understand the importance of gifted education for nurturing students' potential and talents. They gained a deeper understanding of gifted education and how to use differentiation to cater for learner diversity. They also learned how to nurture higher-order thinking and social abilities of their students through Mathematics teaching. Significantly, the professional interflow helped them design and implement a school-based gifted education curriculum (L1).

Overseas professional exchange

Project GIFT motivated professional exchange between project school teachers. The Project subsidized the travel of several Chinese Language and Mathematics teachers, as well as a school principal, to Chinese Taiwan and Singapore in 2018 and 2019, respectively.

In Chinese Taiwan, teachers attended the "Pre-conference Training on Thinking Skills" organized by Taiwan Normal University and supported by the International Research Association for Talent Development and Excellence. Partnering with Project GIFT, School A delivered a poster presentation at the 15th Asia Pacific Conference on Giftedness. Entitled *Immersion of Gifted Education Elements in the Chinese Reading-Writing Learning Classrooms With Differentiation and Its Effectiveness on Improving Students' Performance* (Lee et al., 2018), the study examined how the immersion of elements of gifted education in an integrated reading and writing Chinese Language unit enhanced students' higher-order thinking, creativity, and collaborative abilities. They also argued that such practices cultivated students' moral values, suited their cognitive and affective needs, and improved their reading and writing abilities.

To gauge learning effectiveness, the school conducted class observations, reviewed students' writing tasks, and carried out a questionnaire survey and postunit interview. Evaluation findings supported the value of differentiation integrated with creative and affective education in students' writing. In general, a differentiated teaching strategy allowed for greater initiative and more fruitful group discussion, resulting in the enhancement of students' collaborative, creative, critical thinking, and problem-solving skills. Providing examples of enriched and extended learning tasks, the school's presentation was well received. Indeed, the school received the Poster Award in recognition of the teachers' excellent work of participating teachers by the international community of gifted education in Asia.

School B delivered a presentation entitled *An Empirical Example of Implementing School-Based Gifted Education in Grade 8 Mathematics Class for Learning the Pythagoras Theorem* (Chui et al., 2018). This study examines the introduction of elements of gifted education into regular Mathematics classrooms and explores strategies for learner diversity based on multiple

intelligences theory and differentiated teaching. In practice, the learning tasks, content, and assessment were carefully designed to meet the characteristics and needs of students. A total of 32 mixed-ability Secondary 2 students enrolled in the L1 Mathematics class. Differentiated teaching with a modified curriculum, instruction, and assessment was adopted. To enhance class interaction and collaboration, students were categorized into mixed-ability groups and instructed to share their views on alternate proofs of the Pythagoras theorem. School-based gifted education with differentiation and flexible grouping strategies helped in fostering students' engagement in learning to a substantial extent. Moreover, the active participation of students in the learning process enhanced their interpersonal and intrapersonal skills, including their self-confidence, collaboration skills, and personal–social competence.

In sum, all participating teachers welcomed the educational visits because they broadened their horizons, extended their learning opportunities, and promoted professional interflow. Most importantly, professional interflow enhanced teachers' competency and confidence in addressing learner diversity through the implementation of a school-based gifted education curriculum in regular and pull-out classes.

Curriculum development

Through close cooperation with the two key schools and teachers, Project GIFT facilitated the introduction of key elements of gifted education—namely, creativity, higher-order thinking, as well as personal and social competence—into the core curricula of Chinese Language and Mathematics education. For illustration, two gifted education curricula for regular Chinese Language and Mathematics classrooms (L1) were presented as follows.

In School A, five classes of Primary 3 students—comprising 159 students in total—participated in the study. The integrated Chinese reading-writing unit was codesigned by six Chinese Language subject teachers and a gifted education coordinator, with the support of Project GIFT. The learning unit comprised four fables. The following five lessons reflect the effectiveness of differentiation integrating creativity and affective education for improving students' writing.

Lesson 1 used a fable entitled, *The Little Bear Who Gets Stuck in the Sunroof*. Students were categorized into four groups with mixed-learning abilities. Guided by teachers' questions, students read the story and analyzed the rhetorical pattern: introduction (qi), development (cheng), transition (zhuan), and conclusion (he). They also needed to understand the characters' personalities through a detailed analysis of the story. As an extension of learning, a post-lesson assignment using the story "The Boy Who Cried Wolf" was provided to the students. Tiered according to three levels of difficulty, the assignments catered for the diverse learning needs of students. Students were asked to read the story and complete one of the worksheets with guided questions

matched to their ability to understand the structure of a story, the personality of characters, and the moral of the fable.

In Lesson 2, teachers infused elements of creativity and affective education into students' learning. With the completed worksheets on "The Boy Who Cried Wolf" fable, students worked in groups to identify ways in which the boy could have fun when watching over his flock of sheep. The teachers then guided the students to learn the moral value of the story. Students were asked to explore all possible ways in which the villagers' trust might be regained at the end of the story. To meet the diverse learning abilities, students could choose from different stories—namely, "The Ant and the Grasshopper," "The Lion and the Mouse," and "Two Friends and the Bear"—according to levels of difficulty.

In Lesson 3, the teacher sought to nurture students' creativity and affection. Students were asked to discuss what they would do if they were one of the characters, as well as think about the consequences of the stories. In another extended activity, students were asked to appreciate and critique "The Young Thief and His Mother" by rewriting unfavorable parts and generating their own story endings.

The fourth and fifth lessons employed differentiated strategies to enhance students' writing skills using *Cinderella*. Students were divided into four groups, with each group's Cinderella assigned a personality according to students' own traits, which included the "lazy group," "greedy group," "helpful group," and "studious group." Students were then requested to engage in group discussion and rewrite the story to develop a new and meaningful ending.

In terms of evaluation, the school conducted class observations, reviewed students' writing tasks, and carried out a questionnaire survey and post-unit interview. Findings indicated that differentiation allowed more initiative and fruitful group discussion and enhanced students' collaboration, creativity, critical thinking, and problem-solving skills. The cognitive and psychosocial needs of students were also addressed.

In School B, a lesson entitled "Pythagoras Theorem" adopted a whole-class approach with an enriched curriculum to develop students' higher-order thinking, creativity, as well as personal–social competence. The school presented its successful experiences at the 15th APCG in a presentation entitled *An Empirical Example of Implementing School-Based Gifted Education in Grade 8 Mathematics Class for Learning the Pythagoras Theorem* (see Chui et al., 2018).

A total of 32 mixed-ability Secondary 2 students attended the lesson. Differentiated teaching with modified curriculum content (i.e., differentiation of the curriculum), instruction (i.e., the use of appropriate pedagogical practices including grouping strategies and varied resources), and assessment (i.e., the use of appropriate methods of assessment for learning) were adopted. Moreover, the learning contents, activities, and assessment in the form of a series of worksheets were carefully designed based on the characteristics and needs of students.

Facing challenging tasks and advanced content, students were highly engaged in working out their proof using origami while teachers attended to students in need of individual support. Students were then divided into eight groups with homogenous mathematical ability. Worksheets focused on a collection of Pythagoras' theorem proofs and arranged in order of difficulty were developed and distributed to students according to their abilities. Students met the challenge, completed the differentiated worksheets, and presented their proofs to group members. To enhance exchange and collaboration, students were regrouped into mixed-ability groups and share their work with their new group members, thus learning alternative proofs. During the lesson, the teacher observed and monitored the entire learning process, provided appropriate support to individual students, and evaluated the effectiveness of the designed contents, activities, and worksheets for student learning. Other teachers and Professional Development and School Support Team members of the Project participated as observers. An "evidence of learning" checklist was developed for observers to record and review the teaching and learning process, as well as student learning outcomes.

Teachers' class observations indicated that the school-based whole-class gifted education with differentiated teaching—including differentiation of learning contents and instruction with various grouping strategies—could enhance students' learning engagement to a significant extent. The active participation of students in the learning process—for instance, by presenting their proofs to the whole class and sharing their work with other group members—enhanced their interpersonal and intrapersonal skills, including their self-confidence, collaborative learning skills, communication skills, and personal–social competence. A convenient way of recognizing students' different intelligences, origami proved an effective means of improving students' practice and skills. The questions and worksheets also provided students with opportunities to develop their higher-order thinking and creative problem-solving skills. Moreover, learner diversity was addressed through different grouping strategies, extra-worksheet exercises, and appropriate support from the teacher.

Student development

In addition to the L1 curriculum, Project GIFT collaborated with the two schools to develop the L2 pull-out programs. High-ability students were selected based on teachers' recommendations, their school attainments, as well as the talent search database provided by the Project. Student talent portfolios were developed by assessing students' subject abilities, creativity, logical thinking, multiple intelligences, giftedness, psychological well-being, self-efficacy, and satisfaction with life. This was further developed into a school-based talent search database, which teachers used to obtain a better understanding of their students' characteristics and talents. This was essential for developing a curriculum able to cater to the diverse needs of students.

School A developed an L2 program entitled "Photo-Taking and Writing." In the learning process, students enhanced their IT, communication, and collaborative skills. Through photography and onsite observation, talented and high-ability students reflected on their neighborhood and relevant community affairs. In a photo exhibition held in May 2019, students showed their care and concern for their neighborhoods through their photography and creative writing. The exhibition was successful, receiving positive feedback from parents, teachers, students, and guests.

School B also successfully implemented their L2 initiative in a Mathematics lesson entitled "Extension of Pythagoras' Theorem" for Secondary 3 students, who were selected based on their Mathematics examination results, teacher nominations, as well as students' self-nomination. With the help of the talent search database developed by the Project, students demonstrating outstanding academic performance, as well as a strong interest and good foundations in Mathematics and reasoning skills, were selected by the subject teachers to participate in the pull-out programs.

The lesson was designed to develop inquiry and problem-solving abilities in Mathematics—including their observation, generalization, and judgment skills—using proofs or counterexamples. Lesson content was primarily presented through a guided discovery approach. With the scaffolding provided through worksheets, students were encouraged to discover new knowledge or prove new results by themselves. For some problems, multiple solutions were provided to students to deepen their understanding. To continue students' learning beyond the classroom, extension materials involving internet resources were provided at the end of each unit.

Conducted as part of School B's Secondary 2 mathematics enrichment program, the program yielded promising results as evidenced by students' active class participation and enhanced learning motivation. Students showed high commitment to and strong motivation in solving the challenging tasks and constructing mathematical knowledge. Students also exhibited greater engagement and diligence in both class and extended learning activities.

Parent empowerment

To empower parents and engage them in homeschool collaboration, a public seminar entitled "Unleashing Children's Potentials: Some Dos and Don'ts for Parents" was held in May 2018. Evaluation results indicated that the majority of the parents who attended the seminar changed their attitudes toward nurturing children. Most were willing to adjust their expectations of their children and recognized their nurturing role. Many parents also reflected on how to develop their children's talents and prepare for their success.

Project GIFT also worked closely with the two schools to organize the parent seminars. In October 2018, School A held a seminar entitled "How to Enhance Students' Language and Generic Skills Through Gifted Education?" to inform parents of Primary 2 to Primary 4 students of the rationale of gifted education, recent curriculum development of gifted education, strategies to cater

to learner diversity, changes in lesson delivery and learning outcomes, and parents' role in enhancing children's language ability through homeschool collaboration. In the seminar, some Primary 3 parents shared positive views on the changes, growth, and achievements of students following the implementation of gifted education in Chinese Language regular classrooms. Many of them observed the enhanced learning motivation and competence and language skills among their children. Most importantly, more parents understood the importance of homeschool collaboration in talent development and catering diversity in learning.

An additional seminar was arranged for the parents of L2 students in May 2019. The general response was favorable, with some 19 L2 parents greatly appreciative of the event. Evaluation results revealed that all parents agreed on the importance and effectiveness of homeschool partnership. All parents of L2 pull-out program students found the seminar helpful and effective. More specifically, the seminar strengthened their knowledge regarding gifted education, helping them understand the special educational and affective needs of their talented and gifted children. They found the seminar inspiring, claiming that it motivated them to reflect on effective ways to nurture their children.

Similarly, School B organized a parent seminar entitled "Home-School Cooperation to Support Gifted Children" in April 2019. The target participants were the parents of students enrolled in the L3 Program and L2 Mathematics Program "Extension of Pythagoras' Theorem." Attended by 27 parents, the seminar was well received.

Finally, two pairs of parents from both schools were invited to deliver a sharing in the parent seminar session in the Project Dissemination and Celebration in June 2019. A total of 61 parents from the schools' L2 programs responded to the event evaluation. The results illustrated the effectiveness of the program, with the majority of respondents reporting that the event deepened their knowledge of gifted education and the unique characteristics of gifted children. They agreed that homeschool collaboration was important for the growth of their children and found the seminar inspiring insofar as it motivated them to reflect on how to nurture their children and encourage whole-person education.

Financial support

Subsidized by Project GIFT, the two key schools were able to reduce the teaching workloads of the members of the Gifted Education Task Force, with the employment of an additional teacher over the 2-year collaboration. Equipment and resources were also purchased for the promotion of gifted education programs. In School A, the additional teacher helped in the design and implementation of the L2 curriculum, yielding fruitful results and encouraging comments from various school stakeholders. In School B, the teaching load of some teachers of the Gifted Education Task Force was relieved by the recruitment of an additional Mathematics teacher. In doing so, the schools were

provided with more resources, time, and space to develop and promote gifted education both within and beyond school walls.

Teachers' perceptions of Project GIFT

Project GIFT played an essential role in supporting and collaborating with the two project schools to address the issue of learner diversity in gifted education. To conduct an evidence-based evaluation, Project GIFT conducted a survey to collect teachers' views on the perceived benefits of the project. It also conducted individual and focus group interviews to understand the experiences of participant teachers in school-based professional collaboration and teacher training at the end of the 2017–2018 school year. This section explores interview data in greater detail.

Participants

A total of 57 teachers—including vice principals, gifted education coordinators, and subject teachers—from 20 project schools participated in 12 interview sessions. Participants were invited because they were the major project leaders. Interview groups were decided according to school types (key and network schools), educational stages (primary and secondary), and subjects. A total of five categories were formed: (1) Primary Chinese Language, (2) Primary English Language, (3) Primary Mathematics, (4) Primary General Studies, and (5) Secondary Mathematics and Integrated Science. Interviews were voluntary. This study focuses on the responses of vice principals, Gifted Education (GE) coordinators, and teachers from Schools A and B.

Procedures

Two stages of individual and focus group interviews were held at the end of the 2017–2018 and 2018–2019 school years—that is, approximately 1–2 years after the collaboration between the Project team and schools. Interviewees had at least 6 months of collaboration experience with the Project team. Therefore, the interviewees had enough experience to evaluate the impacts of the Project on their professional development, as well as comment on the collaboration and project initiatives. The interviews were audio-recorded with the consent of the interviewees, and the data were coded with reference to the six key components of the Project. The coding was cross-checked by two researchers. This study only reports on the results of the first stage of interviews (2017–2018) with interviewees from Schools A and B.

The first stage of interviews took place from July to August 2018. An interview guide was developed at the preparation stage. A pilot study was conducted in June 2018 to test the understanding of the interview questions and finalize the interview procedures. The interviews were divided into two sessions. The first session involved asking seven questions to obtain participants' views regarding their expectations when joining the Project, experiences in participating in Project

initiatives, training sessions and school-based collaboration, their perceived benefits with respect to their professional and school development, curriculum development, student learning in gifted education, and parent education on gifted education. The session also sought their insights regarding their expectations for the 2018–2019 school year. After completing the first session, teachers left the interview room. Vice principals and gifted education coordinators were then invited to stay and join the second interview session. They discussed three questions regarding the school's background and situation in promoting school-based gifted education in their respective schools.

Results

Interviewees discussed the fruitful results and positive impacts of the Project's intervention programs. Before participating in the Project, some teachers believed that gifted education was reserved for high-ability students. As such, they found it difficult and impractical to promote gifted education in whole-class teaching at their school. Their lack of understanding and professional competence hindered the effective development of school-based gifted education (Suprayogi et al., 2017). Significantly, after joining the Project, teachers believed that the three-tiered gifted education model was for all children who exhibited the ability and willingness to learn. These sentiments are reflected in the following comments of two participating teachers:

> Gifted education is for students with high abilities. If there are few, there is no need. Gifted education for the whole-class means every student in the class has high abilities. That is really our blind spot … Then teachers agreed that gifted education is for all children who have abilities and opportunities to learn. (Teacher A)

> The school wants to promote gifted education. But a lot of teachers think that most students are not gifted and there is little need. Although the Gifted Education Team understands that having all students to be gifted is not a pre-requisite for L1 implementation, it is difficult to persuade other teachers to understand and accept. (Teacher B)

Both interviewees observed that the classroom had been transformed from a teacher-centered to student-centered environment. Teachers were highly sensitive to students' needs and took into account students' interests, abilities, and expectations in classroom differentiation. Teachers adopted a student perspective to design tiered activities to differentiate the learning process and outcomes, as well as creative assignments to meet diverse students' needs. According to interviewees, students of various abilities became more autonomous learners:

> Students are the center of learning … previously we seemed to focus more on teacher-led [education]. (Teacher A)

> Many colleagues use differentiated activities and assignments. However, we seldom allow children to choose in terms of their interests and abilities, as well as their will. We empower students to make

> choices in learning. Certainly, students engage a lot more than before and this is the biggest change I have observed. (Teacher B)
>
> In the past, it was usually me as a teacher that helped them solve any problem. But I did enjoy this new design. I walked close by to look at how students solved the problem. We discussed how they were going to approach and solve the problem. Sometimes they like to have a few guiding questions or criteria so that they can find the solution by themselves. This experience is new to me. (Teacher C)
>
> I am impressed with the grouping and tiered worksheets to cater for the individual learning needs. For example, first using homogeneous grouping to learn about the materials, then sharing the information with other groups through heterogeneous grouping. Previously, we seldom had group activities in Mathematics lessons. Students were not used to sharing knowledge with one another. It is a new challenge for me. (Teacher D)

More specifically, teachers reported that although catering for diversity in learning had been the school's main concern over the past few years, teachers' lack of understanding of gifted education was the main obstacle to its effective implementation (Wan, 2017). Significantly, interviewees expressed the Project's professional support and teachers' capacity building served to enhance teachers' confidence in promoting gifted education. Teachers gained more confidence in promoting L1 and L2 pedagogical designs through various strategies, including differentiation and creativity in education. However, they did find that student autonomy in the classroom could be stressful. Interviewees emphasized the need to cater to creative thinking and affective needs, as well as well-being. In view of the specific needs of schools and teachers to better understand students' interests and learning abilities, the Project played a leading and supportive role in helping the project schools develop a student and talent database. On the basis of student data, the teacher adopted flexible grouping strategies and lesson designs to meet the specific needs of the students. In this regard, interviewees noted:

> We have become more confident in promoting L1 in gifted education and believe that all students gain benefits in L1 implementation. Gifted education not only focuses on the academic arena, but the developmental process of children, including abilities, character, and attitudes. This means positive development. (Teacher A)
>
> In L1, we have designed activities with the goal of enhancing creativity, which is not too difficult to achieve if students are given opportunities to do so … Students can generate ideas more quickly and their creative performance has improved … In the L2 program, we have infused affective elements in the design. We discovered that if we enhanced emotional sensitivity and expression, then students had something they wanted to write about. (Teacher B)
>
> Preparing for this lesson can be rather stressful. You feel uneasy when everyone is doing different things. You feel like you are doing nothing and are unsure about what they can achieve. More preparation work actually produces great psychological stress. (Teacher C)

Principals and teachers noted that after a whole year of program implementation, they expected to strengthen their own gifted education curricula. This change in attitude toward school-based gifted education facilitates the educational sustainability. As the following comments indicate, many teachers and principals noticed the positive impact of the Project on school-based gifted education development:

> The change is that the Project provides a platform for the teachers to work together. It has given us a comprehensive L1 concept. Then, we have a chance to change, to develop our professionalism, and to see how to implement gifted education … [as well as] common lesson preparation and classroom teaching to improve actual teaching. In addition, the Project helps school development … the whole year's support, teachers' training, collaboration with teachers, support for parents, [and] pull-out programs … they brought about new ideas and excitement. (Principal A)

> I feel the biggest change is the mode of teaching. After joining this Project, teachers led students to think … to analyze. The Project let us know students' values and attitude are important. Another big change is affective education in these two years. We changed from overlooking to main direction of development … The most impressive thing was making the Primary 4 students care for the community … they expressed their views … they could do something beyond teachers' expectation. (Teacher E)

> I observed colleagues' improvement in their teaching and confidence. On the other hand, teachers know how to handle the issue of learner diversity. They show improvement. Their confidence has been enhanced … Having grasped the skills and strategies, they can continue to develop in their key learning areas and subjects. (Principal B)

Discussion

Throughout the 2 years of Project-School collaboration, Project GIFT has contributed significantly in promoting Hong Kong's gifted education, particularly in terms of advancing teachers' capacity building to meet the rising demand for schools to cater to learner diversity. The effective implementation of gifted education in the two schools further demonstrated the vital contributions of the Project. This study identifies several successes.

First, the Project provided significant financial support to the two key schools. Financial subsidies enabled the schools to recruit additional teaching or administrative staff to relieve some of the teaching or administrative workload of the teachers. In doing so, the members of the Gifted Education Task Force enjoyed more space, time, and resources to develop a school-based curriculum and learning activities for classrooms with mixed learning abilities and different learning styles.

Second, Project GIFT had positive and far-reaching impacts on school development, teachers' professional development, and curriculum development. At the school policy level, professional

collaboration guided the two schools in reviewing and refining the school-based gifted education policy. In the long run, the successful implementation strengthened the school's competence in maintaining the sustainability of school-based gifted education, which was one of the ultimate aims of Project GIFT. In both schools, promoting gifted education and catering to the diverse needs of learners constitute the main direction for school development going forward.

In terms of the professional competency of school personnel, Project GIFT improved teachers' skills in gifted education curriculum development. Many teachers welcomed and appreciated the centralized joint-school and school-based training programs. Their appreciation was reflected in both the quantitative data and qualitative interviews. Both local and overseas professional development programs proved an effective means of broadening teachers' horizons, expanding their learning experiences. Teachers' understanding of local and overseas gifted education curricula and provisions was greatly enhanced. Moreover, lesson observations and post-lesson sharing encouraged professional exchange. Interaction between local and overseas educators provided teachers with valuable insights, inspiring deeper reflection on the implementation of gifted programs and curricula in their respective subjects in the local context.

Third, numerous project school teachers exhibited remarkable changes in terms of their understanding of and views toward gifted education. Many gained a better understanding of the key concepts and rationale of gifted education. They showed a readiness to share their implementation experiences and expertise with other subject teachers. Consequently, it fostered the forming of a professional learning community at schools.

Fourth, the Project played a valuable role in addressing diversity in learning in Hong Kong's gifted education. In addition to onsite and school-based support, centralized teacher training successfully enhanced teachers' awareness of the diverse cognitive and affective needs of gifted students. This served to convince teachers of the importance of gifted education in nurturing creativity, higher-order thinking skills, as well as personal and social competence. They also grasped the skills of differentiation and felt more confident in promoting and developing a school-based curriculum able to satisfy and challenge high-ability and gifted students. The successful completion of the L1 enriched curricula for all students and the L2 pull-out programs for gifted and talented students underscore the effective leadership of the Project. The Project Dissemination and Celebration (June 22, 2019) provided students with a valuable platform to showcase their talents and potentials.

Finally, it is worth noting the success of parent empowerment in both schools. In addition to enhancing their understanding of gifted education, giftedness, as well as the cognitive and affective characteristics of gifted children, parents recognized the importance of parenting and nurturing their children. This change in attitude allowed them to cooperate with the schools for the benefits of gifted children.

Conclusion

Project GIFT constitutes the first research-based educational program in gifted education that intervenes on both L1 (whole class) and L2 (pullout) of Hong Kong's three-tiered educational model. Over a 3-year period, the Project advanced initiatives in six focal areas to successfully implement L1 and L2 gifted education programs in 20 primary and secondary schools across Hong Kong. After conducting a needs analysis and identifying the problems and strengths of the students and school, the Project focused on enhancing teacher competence and parental understanding regarding the affective and educational needs of gifted students. Through continuous onsite professional training and school support, participating teachers developed whole-class and pull-out teaching modules and investigated how students responded to the programs with reference to the goals of enhancing higher-order thinking skills, creativity, and personal and social competence. In this respect, teachers and researchers employed action research and standardized research instruments. Given the evidence of the Project's positive impact and success within the 3-year period, it is anticipated that the participating schools will sustain their commitment to gifted education, harnessing teams of competent teachers and parental support to unleash student potential and promote student development.

Limitations

This study has several limitations. First, the study focuses on two key schools. Discussion of all 20 projects schools is necessary to gain a comprehensive picture of Project GIFT. Second, discussion concentrated on the quantitative and qualitative data concerning school administrators, teachers, and parents. To facilitate a more effective evidence-based evaluation, views from other school stakeholders—such as students—should be included. Finally, as the Project's school-based professional support was completed at the end of August 2019, the results reported in this study are only partially complete. In this respect, a comparative study of the Project's impacts on different stakeholders before and after the intervention program may be beneficial.

Acknowledgments

This article is part of the *Jockey Club "Giftedness into Flourishing Talents" Project* funded by the Hong Kong Jockey Club Charities Trust. Special thanks to the students, teachers, principals, and parents who participated in this research. Our gratitude also goes to the investigators: Lai Kwan Chan (co-chief principal investigator), Daniel T. L. Shek (co-chief principal investigator), Louisa Y. S. Cheung, Mavis J. He, Angela F. Y. Siu, and Joseph K. F. Wu (principal investigators).

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

Brody, L., & Benbow, C. (1987). Accelerative strategies for the gifted: How effective are they? *Gifted Child Quarterly*, *3*, 105–110.

Callahan, C. M. (2000). Evaluation as a critical component of program development and implementation. In K. A. Heller, F. J. Monks, R. J. Sternberg, & R. F. Subotnik (Eds.), *International handbook of giftedness and talent* (2nd ed., pp. 537–547). Elsevier.

Census and Statistics Department. (2018). Quarterly report on general household survey- January to March 2018. https://www.statistics.gov.hk/pub/B10500012018QQ01B0100.pdf

Chan, D. W. (2001). Gifted education in Hong Kong: Issues and challenges in the new millennium. *The Australasian Journal of Gifted Education*, *10*, 5–12.

Chan, D. W. (2002). Stress, self-efficacy, social support, and psychological distress among prospective Chinese teachers in Hong Kong. *Educational Psychology*, *22*(5), 557–569.

Chan, D. W. (2003a). Adjustment problems and multiple intelligences among gifted students in Hong Kong: The development of the revised student adjustment problems inventory. *High Ability Studies*, *14*(1), 41–54.

Chan, D. W. (2003b). Assessing adjustment problems of gifted students in Hong Kong: The development of the student adjustment problems inventory. *Gifted Child Quarterly*, *47*(2), 107–117.

Chan, D. W. (2007). Positive and negative perfectionism among Chinese gifted students in Hong Kong: Their relationships to general self-efficacy and subjective well-being. *Journal for the Education of the Gifted*, *31*(1), 77–102.

Chan, D. W. (2008). Gifted education in China: Reflections and challenges. In S. T. Hann & M. W. Lewis (Eds.), *Education in China*: *21st century issues and challenges* (pp. 39–59). Nova and Science.

Chan, D. W. (2012). Life satisfaction, happiness, and the growth mindset of healthy and unhealthy perfectionists among Hong Kong Chinese gifted students. *Roeper Review*, *34*(4), 224–233.

Chan, D. W., Chan, L. K., & Sun, X. (2019). Developing a brief version of Ryff's scale to assess the psychological well-being of adolescents in Hong Kong. *European Journal of Psychological Assessment*, *35*(3), 414–422.

Chan, D. W., Chan, L. K., & Zhao, Y. (2009). Twenty-five years of gifted education research in Hong Kong 1983–2008: What lessons have we learned? *Educational Research Journal*, *24*, 135–164.

Chan, S., & Yuen, M. (2015). Teachers' beliefs and practices for nurturing creativity in students: Perspectives from teachers of gifted students in Hong Kong. *Gifted Education International, 31(3)*, 200–213.

Cheung, A. C. K., & Yuen, T. W. W. (2017). Examining the perceptions of curriculum leaders on primary school reform: A case study of Hong Kong. *Educational Management Administration & Leadership*, *45*, 1020–1039.

Cheung, P. C., Lau, S., Chan, D. W., & Wu, W. Y. H. (2004). Creative potential of school children in Hong Kong: Norms of the Wallach-Kogan creativity tests and their implications. *Creativity Research Journal*, *16*(1), 69–78.

Cheung, R. S. H. (2019). Professional development program for teachers: Nurturing affective development in Hong Kong gifted education. *Nurturing Talents APFG Newsletter: Special Issue on STREAM Education for Gifted Students in Asia-Pacific*, *6*(2), 5–7.

Chui, C. Y., Wong, C. H., Chan, L. K., Chu, Y. S., & Cheung, H. T. (2018, July 12–15). *An empirical example of implementing school-based gifted education in grade 8 mathematics class for learning the Pythagoras theorem. 15th Asia-Pacific Conference on giftedness*. Bangkok, Thailand.

Curriculum Development Council of Hong Kong SAR. (2009). *Senior secondary curriculum guide—The future is now: From vision to realization (Secondary 4-6). Booklet 7, Catering for learner diversity: Excellence for all in senior secondary education*. Education Bureau of Hong Kong SAR.

Diezmann, C. M., Lowrie, T., Bicknell, B., Faragher, R., & Putt, I. (2004). Catering for exceptional students in mathematics. In B. Perry, G. Anthony & C. Diezmann (Eds.), *Research in mathematics education in Australasia 2000-2003* (pp. 175–195). MERGA.

Diezmann, C., Thornton, C., & Watters, J. (2003). Addressing the needs of exceptional students through problem solving. In F. Lester & R. Charles (Eds.), *Teaching mathematics through problem solving* (pp. 169–182). National Council of Teachers of Mathematics.

Education Bureau of Hong Kong SAR. (2014). Operation guide on the whole school approach to integrated education [in Chinese]. Hong Kong SAR government.

Education Bureau of Hong Kong SAR. (2019, March 22). *Gifted education*. http://www.edb.gov.hk

Education Commission of Hong Kong SAR. (1990). *Education commission report No.4*. Hong Kong SAR government.

Feldhusen, J. (1982). Meeting the needs of gifted students through differentiated programming. *Gifted Child Quarterly*, *26*, 37–41.

Fox, J., & Hoffman, W. (2011). *The differentiated instruction book of lists*. Jossey Bass.

Gardner, H. (1993). *Multiple intelligences: The theory in practice*. Basic Books.

Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. Basic Books.

George, P. S. (2005). A rational for differentiating instruction in the regular classroom. *Theory into Practice*, *44*(3), 185–193.

Griggs, S. A., & Dunn, R. S. (1984). Selected case studies of the learning style preferences of gifted students. *Gifted Child Quarterly*, *28*, 115–119.

Griggs, S. A., & Price, G. E. (1980). A comparison between the learning styles of gifted versus average suburban junior high school students. *Roeper Review*, *3*, 7–9.

Lee, H. L., Lee, W. K., Chan, L. K., & Sun, X. (2018, July 12–15). *Immersion of gifted education elements in the Chinese reading-writing learning classrooms with differentiation and its effectiveness on improving students' performance. 15th Asia-Pacific Conference on giftedness*. Bangkok, Thailand.

Matthews, D. J., & Foster, J. F. (2009). *Being smart about gifted education: A guidebook for educators and parents* (2nd ed.). Great Potential Press.

Ministry of Education of New Zealand. (2002). *Initiatives for gifted and talented students*. Ministry of Education.

Moore, K. D. (2005). *Effective instructional strategies: From theory to practice*. Sage.

Raven, J. C., Court, J. H., & Raven, J. (1987). *A manual for Raven's progressive matrices and vocabulary tests*. The Psychological Corporation.

Rayneri, L. J., Gerber, B. L., & Wiley, L. P. (2003). Gifted achievers and gifted underachievers: The impact of learning style preferences in the classroom. *The Journal of Secondary Gifted Education*, *14*, 197–204.

Rowley, J. L. (2012). Professional development needs of teachers to identify and cater for gifted students. *The Australasian Journal of Gifted Education*, *21*, 75–80.

Shek, D. T. N., Cheung, A. C. K., Hui, A. N. N., Liu, H., & Sun, X. (2019, July 24–28). *Gifted characteristics and satisfaction with life: Mediating and moderating effect of general self-efficacy. 23rd World Conference on gifted and talented children, Vanderbilt University*. Nashville, TN, United States.

Subban, P. (2006). Differentiated instruction: A research basis. *International Education Journal*, *7*, 935–947.

Suprayogi, M. N., Valcke, M., & Godwin, R. (2017). Teachers and their implementation of differentiated instruction in the classroom. *Teaching and Teacher Education*, *67*, 291–301.

Tomlinson, C. A. (1994). Gifted learners: The boomerang kids of middle school? *Roeper Review*, *16*, 177–182.

Tomlinson, C. A. (2001). Differentiated instruction in the regular classroom: What does it mean? How does it look? *Understanding Our Gifted*, *14*, 3–6.

Tomlinson, C. A., & Allan, S. D. (2000). *Leadership for differentiating schools and classrooms*. Alexandria, Association for Supervision and Curriculum Development.

Tomlinson, C. A., Brighto, C., Hertberg, H., Moon, T. R., Brimijoin, K., Conover, L. A., & Reynolds, T. (2003). Differentiated instruction in response to student readiness, interest, and learning profile in academically diverse classroom: A review of literature. *Journal for the Education of the Gifted*, *27*, 119–145.

Tommis, S. (2013). Gifted education in the Hong Kong Special Administrative Region. *Journal for Education of the Gifted*, *36*, 259–276.

VanTassel-Baska, J., & Stambaugh, T. (2005). Challenges and possibilities for serving gifted learners in the regular classroom. *Theory into Practice*, *44*(3), 211–217.

Waldron, N., & Mcleskey, J. (2001). Helping schools include all learners. *Intervention in School & Clinic*, *36*, 175–181.

Wan, S. W. Y. (2016). Differentiated instruction: Hong Kong prospective teachers' teaching efficacy and beliefs. *Teachers and Teaching: Theory and Practice*, *22*(2), 148–176.

Wan, S. W. Y. (2017). Differentiated instruction: Are Hong Kong in-service teachers ready? *Teachers and Teaching: Theory and Practice*, *23*(3), 284–311.

Wong, K. K. D. (2002). Catering for the needs of gifted and talented students by defining an appropriate curriculum. *Hong Kong Teachers' Centre Journal*, *1*, 166–171.

Yuen, M. (2004). Competencies of teachers of gifted learners: The Hong Kong student perspective. *Gifted Educational International*, *18*, 301–312.

Yuen, M., Chan, S., Chan, C., Fung, D. C. L., Cheung, W. M., Kwan, T., & Leung, F. K. S. (2018). Differentiation in key learning areas for gifted students in regular classes: A project for primary school teachers in Hong Kong. *Gifted Education International*, *34*(1), 36–46.

Yuen, M., & Westwood, P. (2001). Integrating students with special needs in Hong Kong secondary schools: Teachers' attitudes and their possible relationship to guidance training. *International Journal of Special Education*, *16*(2), 69–84.