Hong Kong Teachers' Centre Journal, Volume 12

Learning diversity at the NSS level: A preliminary study

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Abstract

Students in Hong Kong show a widening range of learning abilities in secondary school as shown, for instance, by their performance in the Diploma in Secondary Education (DSE) examination which was introduced in 2012 together with the 3-year New Senior Secondary (NSS) curriculum. This study examines how far their diverse learning needs have been catered for. Information was collected from the heads of core subjects from a large variety of schools through an online questionnaire survey. Findings include that catering for learning diversity is beset by problems such as resource shortage, the infrequent use of enquiry-oriented teaching methods and independent learning strategies as well as weaknesses in assessment arrangements in spite of considerable progress in extending learning opportunities outside the classroom. Concerted efforts must be taken by teachers, school heads and the government to improve the implementation of the NSS curriculum and DSE examination in such ways that students irrespective of learning ability can benefit. Ways to rectify the situation include the reduction of teacher workload and provision of additional manpower, continuous curriculum review with far more teacher input, production of handy and up-to-date material resources, modification of teaching approaches and reforming of the examination so that it can really help to enhance learning rather than just its measurement.

Keywords

learning diversity, New Senior Secondary curriculum, Diploma in Secondary Education examination, questionnaire survey, teaching strategies

Introduction

Primary school graduates in Hong Kong seeking admission to public-sector secondary education are allocated to three academic bands according to their scores in internal examinations and their schools' overall performance in the preceding three years (Education Bureau [EDB], 2011). Within the same band, however, considerable differences in learning ability do exist. Differences in the mastery of knowledge are likely to widen both within and between groups as more subjects have to be studied in junior secondary school. They are becoming more obvious in the senior secondary from 2009 onwards because of the requirement for all students to complete a 3-year NSS curriculum instead of the 2-year Certificate of Education (CE) course. The more academic nature of senior schooling for all and the implementation of the policies of "catering for diversities" and "integrating disabled and low ability children in an inclusive environment" in a majority of schools (Education and Manpower Bureau, 2005) are the reasons that are responsible. Teachers have to devote more attention to helping the more able develop further and the increasing numbers of below-average students to do well in the DSE examination (e.g. Chan, 2010), which by nature is more demanding than its predecessor in format, subject content and learning skills.

Now that the first two cycles of the DSE examination are over and the trend of learning diversity is clear. Only 37.7% and 34.5% of the candidates in 2012 and 2013 could meet the university requirements of level 3 in Chinese and English and level 2 in Mathematics and Liberal Studies (Hong Kong Examinations and Assessment Authority [HKEAA], 2012a, 2013). The respective proportions of students who could attain passes (at level 2) in these core subjects were 79.2%, 79.3%, 79.7% and 90.8% in 2012 and 80.3%, 78.1%, 80.7% and 88.0% in 2013 (HKEAA, 2012a, 2013). Given the substantial variations in performance, finding how far the diverse learning needs of NSS students have been catered for becomes imperative. This study is an attempt to do so with respect to resource provision, teaching and learning strategies and continuous assessment practices. The case with the core subjects is examined because students have to pass in all of them (and at least in one elective subject) before they are considered as having completed their secondary education successfully.

Review of literature

Diversity in learning ability

In the literature, learning diversity is generally taken as the presence of variations in learning ability among students receiving the same type of education (Ackerman, Kyllonen & Roberts, 1999; Wu, Tu, Wu, Le & Reynolds, 2012). Its occurrence in the realm of academic knowledge is considered a function of both innate, inherited traits and everyday educational experience (e.g. Biggs & Moore, 1993; James, 2006; Jonassen & Grabowski,

2011). The latter is probably more important than the former as it can be improved through the use of appropriate teaching strategies that are supported by well endowed resources and stimulating learning activities (Means, Chelemer & Knapp, 1991; Tomlinson, 2001). With their extensive classroom experience and understanding of students' strengths and weaknesses, teachers are in the best position to reduce learning diversity (Chappuis, 2009), for instance, by giving individual attention to the weaker ones and helping students analyse practice papers from the Hong Kong Examinations and Assessment Authority (HKEAA) two months ahead of the first DSE examination in late March 2012.

Coping with learning diversity

To begin with, teachers faced with the daunting problems of meeting varying needs and paces of learning in the same classroom do require support from a wide variety of school and community resources (Curriculum Development Council, 2009). Besides the hardware and software resources available in classrooms, schools should have additional manpower and plans to cater for the enrichment needs of higher achievers (such as stargazing and learning the elements of astronomy in physics, and debating in language subjects) and help the less capable ones to catch up (such as in the solution of simultaneous equations in mathematics).

Even if resources are readily available, one size cannot fit all. To cater for learning diversity, writers have identified a variety of teaching skills that are required besides those suitable for the average student. For weaker ones, teachers for instance could make significant adaptations to classroom programmes, curriculum content, teaching and learning processes and even provide tailored plans that can help them rekindle their interest and confidence (e.g. Winebrenner, 1996; Westwood, 2008). For the talented and gifted then, a mastery of acceleration (e.g. offering guidance to the most able promoted to a higher class level or more advanced group), curriculum compacting (e.g. cutting out unnecessary drills and organising appropriate extension work instead), expert grouping (e.g. helping the more able ones develop further insights on a research topic), cluster grouping (e.g. providing specialised programmes at a central point for high-ability students from different schools) and mentoring (i.e. enabling capable students to learn after outside experts) and other appropriate methods are useful for helping them to learn faster and at more advanced levels than the average (Biggs & Moore, 1993; Winebrenner, 1992; Goodhew, 2009).

Language teachers were called on to understand students' personal stories before setting out to teach for instance (McDaniel, 2010). In a related context, Roland (2010) invited them to consider differentiated teaching as serving a buffet that could meet the criteria of variety, quality, balance and attractiveness for students at various ability levels. As Tomlinson (2001) has summarised, teachers should plan and teach with respect to student readiness, interest and needs. Even if their learning needs are well catered for,

students may obtain widely different scores in tests and examinations of the same scope and format. Although it is neither easy to close this performance gap nor simply to narrow it down, teachers should at least help all to score higher than what they are used to have (c.f. the aim of the United States No Child Left Behind Act passed in 2001) (Wiliam, 2006). Assessment has a key role here for helping the more able maximise their potential and the less able to make up for lost grounds (Chappuis, 2009).

The role of assessment on checking learning diversity

Testing students on a broad range of aspects (e.g. listening, speaking, reading and writing in language subjects) and at higher frequencies is considered an effective way of helping teachers understand better how much has been learnt by everyone and the improvements that are needed individually and by each ability group (Berry, 2008). Instead of concentrating on written work, teachers can identify with students more aspects or forms for assessment, such as skills in model-making, recording and video production as well as the delivery of oral presentations (Davies, Herbst & Reynolds, 2011). If appropriate feedback is given and due action is taken, assessment of learning that simply measures how much students have learnt can be changed into assessment for learning that helps everyone (Black & Wiliam, 2006a) to improve (albeit not necessarily at the same pace) and the more able to learn beyond the confines of the lesson (c.f. Black & Wiliam, 2006b). The lesson that can be learnt from the literature is that assessing students in a wider range of format not only could measure diverse learning abilities more effectively but also could encourage those who are otherwise lagging in one aspect or another to develop their potential further instead of giving up altogether.

Methodology and instruments

A multi-stage process was followed to determine how the teachers of core NSS subjects had been coping with learning diversity and preparing students for the public examination. The methodology and instruments used were developed by the researchers in early 2011. The consensus reached thereby about the scope of data needed was used to develop a framework for investigation and focus-group discussions in June with representatives from relevant subject organisations on the membership list of the Hong Kong Teachers' Centre. Questionnaires for teachers were designed and refined according to the results. Respondents were asked about their personal and school backgrounds, resource provision, use of teaching strategies and the arrangements for helping students to do better in the curriculum and examination. Unlike those for the three other subjects, the one for Mathematics asked how learning would be affected by the absence of school-based assessment (SBA) as stipulated for the foreseeable future. Versions in Chinese and English were administered to the teachers of Mathematics and Liberal Studies because their subjects could be studied and examined in one of the two languages.

Data collection began with a series of pilot tests and further amendments in early 2012. A covering letter was sent in mid-April to secondary schools offering NSS curriculum (N=514) to explain the aim of the study and invite the heads of the core subjects to complete the survey through a hyperlink to the website HYPERLINK "http://www.my3q.com" www.my3q.com within three weeks. Responses from the six groups of subject heads concerned (including those of Mathematics and Liberal Studies teaching in English or Chinese) were uploaded onto Microsoft Excel files and processed with the Statistics for the Social Sciences (SPSS) program (Stern, 2010; Morgan, Leech, Gloeckner & Barrett, 2011). The specific functions that were run included FREQUENCIES and DESCRIPTIVES for identifying general patterns and the mean, minima, maxima and standard deviation values of responses, CROSSTABS for determining whether pairs of variables were related, and CORRELATE for assessing the strength and direction of relationships (Muijs, 2011).

Results

School, student and teacher backgrounds

Respondents to the questionnaire survey varied substantially in numbers across subjects, from 63 (out of 514) teachers each of English and Chinese to 90 (out of 514) teachers of Mathematics teaching in either language. All of them had long teaching experiences of 11 years or more. Unlike the others, Liberal Studies teachers had fewer than five years in their subject as it was only an elective offered in about 25% of schools at the Advanced Supplementary level before 2009. Training could be considered sufficient overall as the numbers of teachers who had taken the respective curriculum and assessment courses (e.g. 7.7 in Liberal Studies (EMI) on average) were greater than the numbers of student groups concerned (5.6). Most of them were teaching in co-educational aided schools sponsored by a variety of religious, welfare and community organisations (cf. Table 1).

Students completing the NSS curriculum in 2011-12 had been allocated to their classes mostly by their performance in Chinese, English and Mathematics in Form 3 in the academic year 2008-09. The majority of schools were running five classes of Form 4 to Form 6 for this first NSS cohort. However, the mean number of groups in each school was about six in the case of Liberal Studies because of the availability of a government grant to employ one additional teacher for facilitating teaching in smaller classes.

Table 1: Responses about background information

	English Language Total = 63	Chinese Language Total = 63	Mathe-matics (CMI) Total = 46	Mathe-matics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
1. School by type of sponsorship 1 = Aided; 2 = Government; 3 = Direct subsidy scheme	Mode = 1	N = 59 Mode = 1	Mode = 1	Mode = 1	Mode = 1	Mode = 1
2. School by the sex of students 1 = Boys; 2 = Girls; 3 = Co-educational	Mode = 3	N = 59 Mode = 3	Mode = 3	Mode = 3	Mode = 3	Mode =3
3. Overall teaching experience 1 = 0 – 5 years; 2 = 6 – 10 years 3 = 11 –15 years; 4 = 16 – 20 years 5 = 21 years or more	Mean = 4.1 Mode = 5	N = 59 Mean = 4.2 Mode = 5	Mean = 2.7 Mode = 3	Mean = 2.7 Mode = 3	Mean = 3.6 Mode = 3	Mean = 3.1 Mode = 5
4. Teaching experience in this subject 1 = 0-5 years; 2 = 6-10 years 3 = 11-15 years; 4 = 16-20 years 5 = 21 years or more	Mean = 4.1 Mode = 5	N = 59 Mean = 4.0 Mode = 5	Mean = 4.1 Mode = 5	Mean = 4.1 Mode = 5	Mean = 1.7 Mode =1	Mean = 0.9 Mode = 1
5. No. of years with Liberal Studies at the Advanced Supplementary Level	N. A.	N. A.	N. A.	N. A.	Mean = 4.7 Mode = 0	Mean = 1.3 Mode = 1
6. Mean no. of classes		N = 59				
(a) Form 4 (2009-10)	Mean =3.9 Mode = 5	Mean = 4.3 Mode = 5	Mean = 4.1 Mode = 5	Mean = 4.6 Mode = 5	Mean = 4.7 Mode =5	Mean = 4.4 Mode = 5
(b) Form 5 (2010-11)	Mean = 3.9 Mode = 5	Mean = 4.4 Mode = 5	Mean = 4.5 Mode = 4	Mean = 4.6 Mode = 5	Mean = 4.7 Mode = 5	Mean = 4.5 Mode = 5
(c) Form 6 (2011-12)	Mean = 3.9 Mode = 5	Mean = 4.4 Mode = 5	Mean = 4.6 Mode = 5	Mean = 4.6 Mode = 5	Mean = 4.7 Mode = 5	Mean = 4.4 Mode = 5
7. Mean no. of groups		N = 59				
(a) Form 4 (2009-10)	4.7	4.8	4.6	4.6	6.0	5.6
(b) Form 5 (2010-11)	4.7	4.8	4.9	4.9	6.0	5.6
(c) Form 6 (2011-12)	4.6	4.8	4.9	4.9	5.8	5.6
8. Streaming of F3 students into F4 by 1 = Overall rank; 2 = Performance in Chin., Eng. & Maths.; 3 = other criteria	Mode = 1	N = 59 Mode = 1	Mode = 1	Mode = 1	Mode = 1	Mode = 1
		N = 59				
9. Mean no. of Form 6 teachers this year	5.1	4.7	1.8	1.8	5.1	5.1
Mean no. of Form 6 students this year	156	157	167	167	153	149
Mean no. of Form 6 classes this year	5.0	4.8	5.0	4.6	4.7	4.5
Mean no. of Form 6 groups this year	5.0	5.1	4.9	4.8	5.7	5.6
10. No. of teachers who had already taken the basic curriculum course in this subject	Mean = 8.5 Mode = 4	N = 58 Mean = 8.1 Mode = 5	Mean = 6.6 Mode = 5	Mean = 6.6 Mode = 8	Mean = 5.7 Mode = 6	Mean = 7.7 Mode = 6
11. No. of teachers who had already taken the basic assessment course in this subject	Mean = 7.5 Mode = 5	N = 57 Mean = 7.8 Mode = 5	Mean = 6.5 Mode = 5	Mean = 6.5 Mode = 5	Mean = 7.6 Mode = 8	Mean = 7.7 Mode = 6

The number of teachers with a valid reply to each item is given by the number N for the subject concerned unless stated otherwise.

Provision of educational resources

In spite of the need to minimize learning diversity in the core subjects, most of the schools had provided extra resources on an equal-sharing basis (cf. mode = 1 across row 1; mode = 3 across row 2, Table 2). The use of extra teachers, multimedia or other teaching materials and outside service support was less frequent than the deployment of teaching assistants (as in the cases of Chinese Language, Liberal Studies (CMI) and Liberal Studies (EMI); see row 4(b)) presumably because of funding constraints.

Table 2: Responses about the provision of educational resources

	English Language Total = 63	Chinese Language Total = 63	Mathe-matics (CMI) Total = 46	Mathe-matics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
1. Has your school provided extra resources to the subject to cater for learning diversity? 1 = Yes; 2 = No	Mode = 1	N = 59 Mode = 1	Mode = 1	Mode = 1	Mode = 1	Mode = 1
2. The extra resources are 1 = provided to weaker students only 2 = provided to top students only 3 = equally shared among all students	N = 52 Mode = 3	N = 39 Mode = 3	N = 27 Mode = 3	Mode = 3	N = 41 Mode = 3	N = 12 Mode = 3
3. No. of types of other resources provided to the subject	Mean = 1.5 Mode = 1	Mean = 0.8 Mode = 1	Mean = 0.7 Mode = 0	Mean = 0.7 Mode = 0	Mean = 1.3 Mode = 1	Mean = 1.1 Mode = 1
4. Types of other resources provided to the subject (1 = Yes; 2 = No)						
(a) Extra teachers	Mode = 1	Mode = 2	Mode = 0	Mode = 2	Mode = 2	Mode = 2
(b) Extra teaching assistants	Mode = 2	Mode = 1	Mode = 0	Mode = 2	Mode = 1	Mode = 1
(c) Extra multimedia or other teaching materials	Mode = 1	Mode = 2	Mode = 0	Mode = 2	Mode = 2	Mode = 2
(d) Outside service support	Mode = 1	Mode = 2	Mode = 0	Mode = 2	Mode = 2	Mode = 2

The number of teachers with a valid reply to each item is given by the number N for the subject concerned unless stated otherwise.

Teaching and learning strategies

The most common activities held recently to enhance teaching quality were drama, opera and movie shows for the two language subjects, writing contests for EMI Liberal Studies and visits for Mathematics and CMI Liberal Studies (row 1, Table 3). Liberal Studies teachers and Mathematics teachers had organised study trips or visits since Secondary 5 more often than others (row 2). More students who were weaker in English Language and EMI Liberal Studies had benefitted from these enhancement activities (row 3) than students who were weaker in Mathematics (both through EMI and CMI).

Table 3: Responses about enrichment activities in teaching

	English Language Total = 63	Chinese Language Total = 63	Mathe-matics (CMI) Total = 46	Mathe-matics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
1. Most recent type of activity held to enhance the teaching of the subject	Drama / opera / movie	N = 31 Drama / opera / movie	N = 7 Visit	N = 6 Museum visit	N = 37 Visit	Writing course
2. How often has your panel organised trips or visits since F5 to enhance the teaching of the subject? 1 = Very often; 2 = Often; 3 = Sometimes; 4 = Occasionally; 5 = Rarely or none	N = 62 Mean = 4.3	N = 57 Mean = 4.0	N = 42 Mean = 1.5	N = 41 Mean = 1.4	N = 62 Mean = 3.6	N = 62 Mean = 1.1
3. Have the trips or visits helped the weaker students to enhance their learning? (5 = Very much so; 1 = Not at all)	Mean = 3.1 Mode = 5	N = 59 Mean = 2.6 Mode = 3	Mean = 1.7 Mode = 1	Mean = 1.7 Mode = 1	Mean = 3.0 Mode = 3	Mean = 3.3 Mode = 5

The implementation of the NSS curriculum has led to the use of new strategies (row 1, Table 4). CMI Liberal Studies teachers recorded the use of much more strategies than other teachers (e.g. 2.1 vs. 1.1 each by English Language and Chinese Language teachers; row 2). Amongst the range of recommendations by the EDB (Curriculum Development Council & Hong Kong Examinations and Assessment Authority [CDC & HKEAA], 2007a, 2007b, 2007c & 2007d), team teaching was the most widely employed one while peer lesson preparation, project learning and small group teaching methods were used at similarly lower frequencies (row 3). All teachers except those of Liberal Studies in EMI schools reported the use of strategies to cope with individual differences within their subjects (row 5). For this purpose, strategies like curriculum tailoring and tutorials were practised at similarly higher frequencies than the others. Cooperative learning was the least widely used overall especially in the case with Chinese Language (row 5). More new strategies (2.2) were employed in CMI Liberal Studies than in other subjects and in EMI Liberal Studies (0.8) in particular (row 6).

Meanwhile, the NSS curriculum has succeeded in extending the focus of study from textbooks to other materials in Liberal Studies (CMI and EMI) much more than in other subjects. It had much less effect on Mathematics (CMI and EMI) in this regard (row 7) as well as on time-tabling across all subjects (row 9). Learning beyond the confines of the classroom was fostered to greater extents in English and CMI Liberal Studies than in the other core subjects (row 8).

Table 4: Use of new strategies by teachers

	English Language Total = 63	Chinese Language Total = 63	Mathe-matics (CMI) Total = 46	Mathe-matics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
1. Has the NSS curriculum led to new strategies for teaching this subject in the school? (1 = Yes; 2 = No)	Mode = 1	N = 59 Mode = 1	Mode = 2	Mode = 2	Mode = 1	Mode = 2
2. Mean number of new strategies employed	1.1	1.1	0.6	N = 42 0.5	2.1	0.0
3. What are these new strategies?		N = 59		N = 42		
(a) Team teaching (1 = Yes; 2 = No)	Mode = 1	Mode = 2	Mode = 0	Mode = 0	Mode = 1	Mode = 2
(b) Peer lesson preparation (1 = Yes; 2 = No)	Mode = 1	Mode = 2	Mode = 0	Mode = 0	Mode = 1	Mode = 2
(c) Project learning (1 = Yes; 2 = No)	Mode = 1.2	Mode = 1	Mode = 0	Mode = 0	Mode = 1	Mode = 1
(d) Small group teaching (1 = Yes; 2 = No)	Mode = 2	Mode = 1	Mode = 0	Mode = 0	Mode = 1	Mode = 1
(e) Others (1 = Yes; 2 = No)	Mode = 1	Mode = 1	Mode = 0	Mode = 0	Mode = 2	Mode = 1
4. Are there teaching strategies to cope with individual differences in the subject? (1 = Yes; 2 = No)	Mode = 1	N = 59 Mode = 1	Mode = 1	Mode = 1	Mode = 1	Mode = 2
5. What are these strategies for coping with individual differences in the subject?		N = 59		N = 43		
(a) Streaming (1 = Yes; 2 = No; 0 = Non-response)	Mode = 1	Mode = 2	Mode = 0	Mode = 0	Mode = 1	Mode = 2
(b) Tailor-made curricula (1 = Yes; 2 = No; 0 = Non-response)	Mode = 1	Mode = 1	Mode = 2	Mode = 0	Mode = 1	Mode = 2
(c) Co-operative learning (1 = Yes; 2 = No; 0 = Non-response)	Mode = 2	Mode = 2	Mode = 2	Mode = 2	Mode = 1	Mode = 2
(d) Tutorials (1 = Yes; 2 = No; 0 = Non-response)	Mode = 2	Mode = 2	Mode = 0	Mode = 0	Mode = 2	Mode = 0
(e) Others	Mode = 2	Mode = 2	Mode = 2	Mode = 2	Mode = 2	Mode = 2
6. Mean number of teaching strategies for individual differences	1.7	N = 59 1.4	1.2	N = 43 1.3	2.2	0.8
7. Has the NSS curriculum led to a shift in focus from textbooks to other materials? (1 = Yes; 2 = No)	Mode = 1	Mode = 1	Mode = 2	Mode = 2	Mode = 1	Mode = 1

	English Language Total = 63	Chinese Language Total = 63	Mathe-matics (CMI) Total = 46	Mathe-matics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
8. Has the NSS curriculum encouraged your students to learn beyond the confines of the classroom? (1 = Yes; 2 = No)	Mode = 1	N = 59 Mode = 2	Mode = 2	Mode = 2	Mode = 1	Mode = 2
9. Has the NSS curriculum led to flexible time-tabling arrangements in your subject? (1 = Yes, 2 = No)	Mode = 2	N = 59 Mode = 2	Mode = 2	Mode = 2	Mode = 2	Mode = 2

The number of teachers with a valid reply to each item is given by the number N for the subject concerned unless stated otherwise.

The following pairs of statistically significant relationships between teaching strategies and resource provision are worthy of investigation (Appendix 1):

(a) The frequency of organising trips or visits to enhance the teaching of the subject was significantly related to and even dependent on

(i) the receipt of extra resources to cater for learning diversity among students if Liberal Studies was taught in English (item 1), and

(ii) the number of types or resources provided in the case of the students of English, EMI Liberal Studies and EMI Mathematics (item 2).

Significant relationships between pairs of variables warranting further analysis were also found in the following (Appendix 2):

(b) The number of new strategies for teaching the subject was

(i) significantly related to or even dependent on the receipt of extra resources to cater for learning diversity in the case of English Language (item 3), and

(ii) significantly related to the number of other types of resources provided by the school in the case of English Language (item 4).

(c) The number of teaching strategies to cope with individual differences was

(i) significantly related to the receipt of extra resources to cater for learning diversity in the case of English Language (item 5), and

(ii) significantly related to or even dependent on the number of other types of resources provided by the school in the cases of English Language, Chinese Language and CMI Liberal Studies (item 6).

(d) In the case of English Language, whether the NSS curriculum could lead to the use of new teaching strategies was dependent on the receipt of extra resources to cater for learning diversity among students (item 8).

(e) In the case of EMI Liberal Studies,

  (i) whether the NSS curriculum could bring a shift in focus from textbooks to other forms of learning and teaching materials was dependent on the receipt of extra resources to cater for learning diversity among students (item 9), and

  (ii) whether the NSS curriculum could encourage EMI Liberal Studies students to learn beyond the confines of the classroom was dependent on the receipt of extra resources to cater for learning diversity among students (item 10).

(f) The use of teaching strategies to cope with individual differences was related to or even dependent on the receipt of extra resources to cater for learning diversity in the case of CMI Liberal Studies (item 11).

(g) Whether the NSS curriculum could encourage students to learn beyond the confines of the classroom was significantly related to or even dependent on the shift in focus from textbooks to other materials in the cases of English Language, EMI Liberal Studies and CMI Mathematics (item 12).

Continuous assessment

A hallmark of the first two cycles of the NSS curriculum (2009-12 and 2012-13) is the requirement for students of English, Chinese and Liberal Studies to be assessed six times internally in prescribed areas through their second and final years of senior schooling and their scores sent to HKEAA prior to the start of the written examinations. The two most common forms of this school-based assessment (SBA) exercise were project work and internal tests. Mathematics does not have any SBA requirement although continuous assessment is still encouraged (CDC & HKEAA, 2007e, 2007f).

A majority of teachers had taken courses offered by the EDB or other professional training institutes on updating their knowledge of the related assessment frameworks (row 15, Table 5). Their rating about the easiness and fairness of SBA was due to (i) similarity in the difficulty of assessment for all students and (iv) the marking of assignments by different teachers (rows 5 and 6). Teachers of English and CMI Liberal Studies also attributed their ratings to (ii) the dependence of student training on their relative performance, (iii) streaming of students by academic level and (iv) teaching of classes/ students by the same teacher. Teachers except those of EMI Liberal Studies reported a lack of preparation materials for students (row 2). The mean number of supporting items named

by teachers ranged from 1.5 in Chinese Language to 2.2 in CMI Liberal Studies only (row 3). Materials provided by the EDB, HKEAA and other organisations were used more often than others. In terms of usefulness then, reference exercises ranked highest among English, EMI Mathematics and EMI Liberal Studies teachers (row 4). Sample papers were regarded as more useful than others for preparing students to take the examinations in Chinese Language, CMI Mathematics and CMI Liberal Studies.

SBA for English, Chinese and Liberal Studies was generally considered by teachers as a fair but difficult procedure for their students (row 6 and row 5). This trend was especially noticeable in the case of CMI Liberal Studies (with the mean value equal to 3.9). The large amount of time needed was the main reason for making it a problem in Chinese Language and Liberal Studies (row 16). The assessment of listening, reading, writing, speaking and integrated skills in English Language was considered a challenge (row 12) for students.

Table 5: Responses about continuous assessment

	English Language N = 63	Chinese Language N = 63	Mathematics (CMI) N = 46	Mathematics (EMI) N = 44	Liberal Studies (CMI) N = 53	Liberal Studies (EMI) N = 15
1. How would you rate the level of complexity towards the daily assessment in your subject at the NSS level? 1 = much less complicated; 5 = much more complicated	Mode = 4	N = 60 Mode = 4	Mode = 3	Mode = 3	Mode = 4	Mode = 4
2. Are there enough support materials for students in preparing for their HKDSE exam? (1 = enough; 2 = not enough)	Mode = 2	N = 59 Mode = 2	Mode = 2	Mode = 2	Mode = 2	Mode = 1
3. What are those support materials? (1= used; 2 = not used)	Mean	N = 59 Mean	Mean	N = 42 Mean	Mean	Mean
Sample examination paper	0.5	0.4	1.5(N = 44)	0.5	0.55	0.6
Reference exercises	0.5	0.4	1.5(N = 44)	0.5	0.58	0.7
School-based materials	0.6	0.5	1.8(N = 44)	0.8	0.70	0.8
Reference books	0.6	0.6	1.6(N = 44)	0.6	0.72	1.0
Other materials supplied by EDB	0.6	0.6	1.9(N = 44)	0.9	0.75	1.1
Materials provided by other bodies	0.8	0.8	1.9(N = 44)	0.9	1.04	1.1
Mean no. of types of supporting materials used	1.6	1.5	1.8(N = 44)	1.6	2.2	1.9
4. Which of the following materials or programmes is most useful for preparing students to take the HKDSE exam? ("useful" in the questionnaires for teachers of Chinese Language, CMI Liberal Studies and CMI Mathematics)	N = 61 Mean = 1.8	N = 59	N = 44	N = 43 Mean = 1.5	N = 53	Mean = 1.9
1 = Sample examination paper		1.0	1.5		1.1	
2 = Reference exercises		1.1	1.6		1.1	
3 = Reference books		1.4	2.0		1.4	
4 = Teacher training from EDB		1.5	2.0		1.6	
5 = Others		1.8	2.0		1.8	
Mean no. of useful materials for preparing students to take the DSE		2.4	1.5		2.3	

Table 5: Responses about continuous assessment (continued)

	English Language N = 63	Chinese Language N = 63	Mathematics (CMI) N = 46	Mathematics (EMI) N = 44	Liberal Studies (CMI) N = 53	Liberal Studies (EMI) N = 15
5. How would you rate the easiness of implementing school-based assessment for your students? (1 = very easy; 5 = very difficult)	Mean = 3.5	N = 59 Mean = 3.6	N.A.	N.A.	Mean = 3.9	Mean = 2.4
6. How would you rate the fairness of current school-based assessment procedures for students in your school? (1 = extremely unfair; 5 = extremely fair)	Mean = 3.1	N = 59 Mean = 3.5	N.A.	N.A.	Mean = 3.5	Mean = 3.2
7. The reasons for the above rating are		N = 59				
(a) 1= The difficulty of assessment is tailor-made. 2 = The difficulty of assessment is the same among all students	Mode = 2	Mode = 2	N.A.	N.A.	Mode = 2	Mode = 2
(b) 1 = The training for students is the same. 2 = The training for students is dependent on their relative performance.	Mode = 1	Mode = 1	N.A.	N.A.	Mode = 1	Mode = 2
(c) 1 = Students are streamed by their academic level. 2 = Students are streamed by another criterion.	Mode = 1 Mean = 1.2	Mode = 1 Mean = 1.8	N.A.	N.A.	Mode = 1	Mode = 1
(d) 1 = Classes/students are taught by different teachers. 2 = Classes/students are taught by the same teachers.	Mode = 1	Mode = 2	N.A.	N.A.	Mode = 1	Mode = 1
(e) 1 = Students' work is marked by one teacher. 2 = Students' work is marked by different teachers.	Mode = 2	Mode = 2	N.A.	N.A.	Mode = 2	Mode = 2

Table 5: Responses about continuous assessment (continued)

	English Language N = 63	Chinese Language N = 63	Mathematics (CMI) N = 46	Mathematics (EMI) N = 44	Liberal Studies (CMI) N = 53	Liberal Studies (EMI) N = 15
8. What kind of continuous assessments has your school provided?						
(a) Uniform tests (1 = Yes; 2 = No)	N.A.	N.A.	1.2	1.2	N.A.	N.A.
(b) Assessment of class work (1 = Yes; 2 = No)	N.A.	N.A.	1.4	1.5	N.A.	N.A.
(c) Regular quizzes (1 = Yes; 2 = No)	N.A.	N.A.	1.2	1.2	N.A.	N.A.
(d) Project work (1 = Yes; 2 = No)	N.A.	N.A.	1.9	1.9	N.A.	N.A.
(e) Online assessment (1 = Yes; 2 = No)	N.A.	N.A.	1.9	1.8	N.A.	N.A.
(f) Others (1 = Yes; 2 = No)	N.A.	N.A.	2.0	2.1	N.A.	N.A.
9. Is the assessment framework clear enough? (1 = Yes; 2 = No)	N.A.	N.A.	Mode = 1	Mode = 1	N.A.	N.A.
10. Can the assessment framework enhance learning? (1 = Yes; 2 = No)	N.A.	N.A.	Mean = 1.1 Mode = 1	Mean = 1.2 Mode = 1	N.A.	N.A.
11. The public examination assesses abilities in Listening, Reading, Writing, Speaking and Integrated Skills. Has your school provided extra training opportunities for teachers to update their understanding of the new assessment framework in these areas? (1 = Yes; 2 = No)	Mode = 1	Mode = 2	N.A.	N.A.	N.A.	N.A.
12. How would you rank the difficulty of SBA in your subject? (1 = most difficult; 5 = least difficult)						
(a) Listening	Mode = 3	Mode = 3	N.A.	N.A.	N.A.	N.A.
(b) Reading	Mode = 3	Mode = 3				
(c) Writing	Mode = 3	Mode = 3				
(d) Speaking	Mode = 3	Mode = 3				
(e) Integrated Skills	Mode = 3	Mode = 3				
13. How would you rate the pressure on teachers from the school-based assessment of Independent Enquiry Studies (IES)?	N.A.	N.A.	N.A.	N.A.	Mean = 4.5 Mode = 5	Mean = 4.4 Mode = 5

Table 5: Responses about continuous assessment (continued)

	English Language N = 63	Chinese Language N = 63	Mathematics (CMI) N = 46	Mathematics (EMI) N = 44	Liberal Studies (CMI) N = 53	Liberal Studies (EMI) N = 15
14. How would you rate the level of difficulty of setting internal examination questions?	N.A.	N.A.	N.A.	N.A.	Mean = 3.5 Mode = 3	Mean = 3.4 Mode = 3
15. How many percent of teachers in your panel had already taken the assessment-related training offered by EDB or other professional training institutes? 1 = 0-25%; 2 = 26-50%; 3 = 51-75%; 4 = 76-100%	Mode = 4	Mode = 4	N.A.	N.A.	Mode = 3	Mode = 4
16. Which of the following is the most important reason for making SBA difficult? 1 = Lack of support funding 2 = Lack of supplementary reference for teachers 3 = Lack of training for teachers 4 = Diversified abilities of students 5 = High demand on students 6 = Large amount of time needed	Mode = 1	Mode = 6	N.A.	N.A.	Mode = 6	Mode = 6
17. What are the advantages of no SBA on teachers and students of this subject?	N.A.	N.A.	Mean	Mean	N.A.	N.A.
(a) There is more flexibility in curriculum planning. (1 = Yes, 2 = No)			1.4	1.2		
(b) Students' pressure can be reduced. (1 = Yes; 2 = No)			1.1	1.1		
(c) Teachers have more time to provide suitable training for different students. (1 = Yes; 2 = No)			1.3	1.2		
(d) Teachers' daily workload can be reduced. (1 = Yes; 2 = No)			1.1	1.2		
(e) The school can implement better-focussed support towards preparation for the public examination. (1 = Yes; 2 = No)			1.2 2	1.3 2		

Table 5: Responses about continuous assessment (continued)

	English Language N = 63	Chinese Language N = 63	Mathematics (CMI) N = 46	Mathematics (EMI) N = 44	Liberal Studies (CMI) N = 53	Liberal Studies (EMI) N = 15
18. No. of advantages of no SBA in this subject	N.A.	N.A.	3.9	4	N.A.	N.A.
19. Mean no. of comments per teacher about the NSS curriculum and DSE examination	N = 26 4.5	N = 59 2.7	N = 10 2.6	N = 10 2.6	N = 24 4.2	N = 6 4.8

The number of teachers with a valid reply to each item is given by the number N for the subject concerned unless stated otherwise.

Teachers of Mathematics need not administer SBA in their subject. They could name four advantages for this arrangement, with the reduction in teacher workload and reduction in pressure on students being the two most common (row 18, Table 5). English and EMI Liberal Studies gave far more negative comments about SBA. Statistically significant relationships warranting further investigation were found as follows (Appendix 3):

(a) The degree of easiness in implementing school-based assessment was related to and dependent on complexity in daily procedures in the cases of English Language, Chinese Language and EMI Liberal Studies. In the case of CMI Liberal Studies, the relationship was significant but the former variable was not dependent on the latter (item 13).

(b) The degree of fairness for implementing school-based assessment in EMI Liberal Studies was dependent on complexity in the assessment process (item 14).

(c) The degree of difficulty in implementing the SBA of Listening (item 15) and Speaking (item 18) in English Language was dependent on complexity in daily assessment.

(d) The degree of difficulty in implementing the SBA of Reading (item 16) and Writing (row 17) in English Language was related to but not dependent on complexity in daily assessment.

(e) The degree of difficulty in implementing the SBA of Speaking in English Language was related to but not dependent on the proportion of teachers who had taken the assessment-related courses offered by EDB or other professional training institutes (item 28).

(f) The pressure on teachers from the SBA of Independent Enquiry Studies projects in EMI Liberal Studies was dependent on the proportion of teachers trained in assessment (item 30).

Discussion

School, student and teacher backgrounds

Although no sampling has been made to invite teachers for participation in this study, the profiles of schools and teachers' experience obtained are generally compatible with official statistics. Similarities can also be found in the mean number of Form 4 and Form 6 teachers, students, classes and groups, the criteria for streaming Form 3 students into Form 4, and the numbers of teachers who had completed the subject-based curriculum and assessment courses. In the light of these trends, the questionnaire replies can be taken as

representative of the views of NSS teachers although allowance should be taken for those of the non-respondents.

Provision of educational resources

Teachers' responses suggest that educational resources are often insufficient especially if additional manpower is concerned and marked learning diversity does exist in the class. The situation is especially critical in the first few years of the NSS curriculum which emphasises the use of new teaching approaches, coverage of academic content at greater depth and breadth and the implementation of school-based assessments in a majority of subjects. The EDB had offered a teacher professional preparation grant and a curriculum migration grant to all schools but they were to be shared by all subjects.

Special resources have been provided in Liberal Studies in view of the numerous controversial issues for in-depth analysis and the need for providing guidance on the completion of an Independent Enquiry Study (IES). However, no similar manpower or hardware support is available to other core subjects probably because they have long existed in the curriculum. This situation is hardly satisfactory in view of the intensive preparations needed for SBA in Chinese and English and the higher demands for students in Mathematics when compared with those of the CE examination that has been replaced. More efforts are certainly required for helping students master basic academic skills (e.g. communication, application and computation), more advanced problem-solving techniques and higher-order questions.

Teaching and learning strategies

Teachers in general have taken steps to cater for learning diversity in the classes through the use of appropriate teaching strategies without sufficient support in spite of the importance given to educational resources by writers in the literature section. Questionnaire responses revealed that drama, opera and movie shows, writing contests and visits were often used for enhancing teaching quality and facilitating in-depth learning. This trend could be beneficial to students who were weaker in writing as well as students who were weaker in oral presentations as both groups were given more opportunities to learn how to express themselves and interact with others in a variety of real-life situations. Whilst team teaching was often used in the classroom, peer lesson preparation was used at much lower frequencies. This finding is surprising in view of the close relationship between these two strategies. However, it might be a reflection of the need to be pragmatic when teachers had little interaction time inside the staff room amidst a heavy workload, or that cooperation among them had long been running smooth. On average, the use of strategies which emphasized class discussion, debate and other forms of collaborative learning in the core subjects with the advent of the NSS curriculum and the DSE examination was still limited.

To cope with learning diversity amongst students, teachers were often making more use of curriculum tailoring and tutorials than streaming and cooperative learning procedures possibly because of the lower degree of organisation and monitoring needed. Mathematics teachers (CMI and EMI) were the less frequent users of new strategies overall and for coping with individual differences in particular. The facts that school-based assessment was not required in their subject unlike the cases with English, Chinese and Liberal Studies and that individual differences were less marked here might be the reasons for this trend.

Because of its issues-based nature, Liberal Studies is a subject which requires the interpretation and analysis of news and commentaries available in a variety of publications and electronic media (Deng 2009). Many teachers had accordingly changed the focus of study from textbooks to other materials to greater extents than their colleagues. In a similar vein, learning beyond the confines of the classroom was fostered more in English and CMI Liberal Studies than in the other subjects probably because of the higher priority accorded to learning directly from other peoples (like visitors from other countries), local community figures (like legislative councillors) and various organisations (such as news firms and environmental groups). Meanwhile, teachers of CMI Liberal Studies were the more frequent users of these new strategies than their colleagues in EMI schools probably because of the need to spend more time on teaching in English and worries about students' ability to discuss controversial issues with insight in a second language.

It is difficult for teachers to organise visits, overseas tours or other out-of-campus activities for their NSS students during school days in view of the disruption to the other classes and difficulties in finding appropriate substitute teachers. The urge to complete the syllabus and allow sufficient time for revision work before the mock examination could make the problem worse. Teachers also need more time to analyse past exam and sample papers with students and assess how far the goals of learning and assessment laid down in the curriculum and assessment guides for the subjects have been achieved. The impact of the NSS curriculum on the flexibility of time-tabling arrangements was minimal after all for these reasons because teachers have to spend more time on identifying the gaps and modifying their teaching and assessment strategies accordingly.

Meanwhile, an increasing range of educational performances, talks, shows, writing contests, visits, study trips and other extra-curricular learning activities has been organised for NSS students in many schools in recent years. To improve their effectiveness, these activities should be streamlined and integrated with curriculum topics both in terms of timing and subject matter. Making use of the facilities in public libraries, museums, universities and government departments is a useful step in this direction. Study tours should be also improved so that students can participate in at least one during their senior years and thereby get more diversified learning experiences irrespective of academic ability and the degree of family support available.

Continuous assessment

The majority of teachers, especially those of English Language, Chinese Language and Liberal Studies, were concerned about the lack of preparation materials for continuous assessments as well as the written examination. These feelings were understandable given that they were not too familiar with the new curriculum and students who would otherwise be siphoned off by the Certificate of Education system could now proceed to Form 6 and face the more demanding DSE examination. In many cases, the only materials that could be relied upon were the sample questions released in early 2010 and the exercises first available in September 2011. Many teachers could not well estimate the number of marks required for getting a pass or any other specified grade and thereby decide on how and how much to teach and assess. Even after the release of practice papers in January 2012, their worries about marking standards and the amount of preparation needed had not been much allayed, as could be inferred from a press statement issued by the HKEAA (2012b).

English, Chinese and Liberal Studies are the subjects which require school-based assessments. The teachers concerned in general felt that the notion of SBA was fair because the validity and reliability of assessment could be enhanced if more aspects of learning (say, oral presentation besides writing skills) were considered and especially if marking and moderation for all classes were done by two or more teachers. They were in agreement with the view in the literature that wider-ranging assessments could encourage weaker students to learn and give due consideration to their overall abilities. However, in spite of holding such a consensus, they considered SBA difficult to implement effectively even after completing the courses run or commissioned by the HKEAA. More focussed training and workshop programmes are surely needed so that teachers can help students of diverse abilities to overcome the challenges presented by overly broad and challenging subject content and skills especially in aspects of assessment in which students have insufficient confidence (such as in the oral section of the English Language examination; cf. HKEAA, 2010).

Mathematics teachers were more relaxed in their responses about continuous assessment probably because of the absence of an SBA requirement. However, they still gave many negative comments (about 2.6 per person) such as concern about time shortage, calls for the establishment of modules M1 and M2 as a separate subject and dissent with the introduction of SBA to their subject agenda. Teachers of English Language and Liberal Studies (EMI) were more vociferous. Together they gave an average of 4.5 to 4.8 comments which described SBA as too time-consuming, tedious, dysfunctional for promoting critical and analytical thinking, too demanding on medium- and lower-ability students, and creating too much workload for teachers and panel heads. Teachers overall were not receptive of SBA at least in its present format. Many of their calls were a mix of downscaling and outright abolition, ridiculing the official description of SBA as a normal part of the curriculum rather than an add-on process (CDC & HKEAA, 2007a, 2007b, 2007c, 2007d, 2007e, 2007f) in the course of teaching and learning.

Suggestions

Student-oriented teaching, independent learning and continuous assessment are the three new features of the NSS curriculum and DSE examination that could help weaker students to perform better and even narrow their gap with the more capable. The first two can facilitate the mastery of enquiry skills while the last can motivate students to study harder at all times and provide a basis for teachers to modify their approaches whenever warranted. Unfortunately, students in face of heavy workload may easily lose sight of what the focus of the curriculum is. The assessment burden may become so great that teachers cannot spend enough time on everyday curriculum planning and the upgrading of teaching quality.

This study overall does suggest that learning diversity at the NSS level has not been well catered for hitherto, like what Lam (2008) has observed of three student communities in a mainstream Hong Kong school. A multi-faceted approach is needed for redressing the weaknesses and ensuring the successful implementation of the NSS curriculum and DSE examination. For overburdened teachers, the provision of additional manpower is essential because only by then could they spend more time on catering for learning diversities. To enhance the quality of teaching and student interaction during the lesson, the numbers of students should be reduced to a maximum of 30 in the more capable classes and 20 in the less able. Reducing the size of less able classes can give more opportunities to teachers finding the difficulties which their students are facing and the ways needed for addressing them. Streaming procedures that create a balance of abilities with the more able accounting for a high proportion (say, 40% to 50%) in the class should be practised if its possible benefits on students (Glass, 2002) are found to be greater than strict ability grouping procedures.

Unduly difficult subject matter, wide coverage of content and skills and a lack of time for revision and self-reflection may encourage teachers to hang onto didactic approaches, students to follow the steps of others indiscriminately if only to play safe, and continuous assessment to become a means for widening the ability gap instead of otherwise. To prevent these undesirable trends from appearing, on-going reviews for the tailoring of subject content and reshaping of examination procedures are needed especially with dynamic curricula like Liberal Studies. To ensure that all students irrespective of ability can benefit, this exercise should be accompanied by efforts for widening and deepening the extent of teacher inputs and competence than what the EDB and HKEAA (Fung, Tang & Chan, 2011) have been doing so far.

Many teachers have attributed resource shortage as an obstacle to the implementation of the NSS curriculum. The EDB should coordinate the production of suitable materials by universities, government departments, Quality Education Fund, Hong Kong Education

City and relevant subject organisations after conducting school surveys at regular intervals. Instead of providing teachers with CD-ROMs and other items that may become quickly outdated, they should give priority to the establishment and updating of websites especially on new subject content, recommended teaching-learning approaches and the use of assessment procedures for the enhancement of learning. Such materials should focus on independent enquiry so that even students of medium or lower ability can learn to identify subject matter of personal interest and investigate issues in a systematic manner. Offering suggestions for the purchase and production of resources that can meet the learning needs of individual classes and students is another essential step forward. The introduction of an equitable system that cares for lower-ability students and less well-endowed schools is also helpful for minimising learning diversity, as what the case with schools in Victoria, Australia has shown (Beeson, 2013).

Teaching approaches that neglect the ability and needs of mixed-ability classes can be stumbling blocks for improving the effectiveness of learning. Teachers can help the more capable ones explore into complicated areas and advanced concepts and master the skills for independent enquiry by using reflective and application-oriented approaches such as brainstorming, report writing, interviews and debates. Encouraging these students to join enrichment programmes offered by the universities and the Academy for Gifted Education is useful in this regard. Such programmes can be made more valuable by listening carefully to teachers' views and increasing the number of students who are served. As for the weaker ones, priority should be given to approaches which can help them analyse knowledge and clarify misconceptions, such as group tutorials, tailor-made exercises, simulation games and role plays (e.g. Dowson 2007; Hue 2007). Meanwhile, cartoons and other forms of drawing are particular problems since they can be viewed from different angles like the witch and the beauty scenario. Guidance for students here should focus on the interpretation and comparison of alternative views through a variety of interactive teaching-learning activities.

Recent years have also seen sharp increases in the organisation of educational performances, talks, shows, writing contests, visits, study trips and other extra-curricular learning activities for NSS students in many schools. To enhance their effectiveness, these activities should be streamlined and integrated with curriculum topics both in terms of timing and subject matter. Making use of the facilities in public libraries, museums, universities and government departments is useful for this purpose. The organisation of study tours should be improved so that everyone can participate and get more diversified learning experiences in at least one of them during senior school irrespective of academic ability and the degree of family support available.

Opportunities for giving detailed insights on oral and written responses in exercises, tests and examinations are often seriously limited because of heavy workload and tight

teaching schedules. Teachers in every subject need more training on giving feedback and directions for improvement to students at different ability levels with respect to both the compulsory and extension sections in the curriculum. It is the obligation of the EDB to provide more enrichment courses and encourage teachers to conduct action research into learning diversity within their classes. Organisations like the Quality Education Fund and Hong Kong Teachers' Centre can help by running award schemes and school authorities may reduce the size or number of classes that the teachers concerned have to teach. Staff development programmes which focus on the sharing of experience with mixed ability classes should also be run to enhance collaboration within the same schools and/or with other schools under similar situations.

If only for alleviating the problem of time shortage, EDB and HKEAA should also restructure and tailor the curriculum to include only the essential content and cancel one of the compulsory modules in all popular subjects. Incidentally, holding the written examinations for the core and elective subjects in late April from the third cycle onwards instead of in late March in the first two can also provide more time for enquiry-oriented learning and teaching and the preparation of high-quality projects for school-based assessment. Running supplementary lessons in the post-examination periods in Form 4 and Form 5 is another possibility because teachers would be more relaxed then and students could have more time for learning at greater depth and reflect on their own examination performance during the subsequent summer vacation.

As highlighted by Berry (2006) about the role of assessment strategies for teaching and learning, continuous assessment is another area of the curriculum where critical review is needed at regular intervals. To strike a balance between breadth and depth, the EDB and HKEAA should consider the inclusion of SBA in the core subjects only as an elective and make it compulsory for students wishing to obtain higher grades and/or gain access to government-subsidised degree courses in local universities. Like the case of offering a higher grade for English Language students who opt for the more difficult paper in Reading than the easier one, this practice can give advanced students more drive to learn as well as appropriate leeway to who are less able or who are only be seeking a pass grade.

As for Mathematics, students should be allowed to study module 1 or module 2 as a separate subject (say, called Further Mathematics) instead of just as an extension of the compulsory part. This arrangement is congruent with the views of questionnaire respondents as well as international practice, such as that in England where Level 5 in DSE Mathematics (Extension) is taken as comparable to Grade A in Mathematics at the GCE Advanced Level (HKEAA, 2012c). It gives more motivation to gifted students to study challenging subject matter (if only for enhancing their chances of admission to science and engineering courses at local and overseas universities), and alleviates the

burden on the less capable ones in studying a module that is far too advanced. It also reduces the workload of teachers, who can then concentrate on helping the more able to achieve even higher and provide a firm basis for realising their potential in the study of the subject. Their colleagues not teaching Further Mathematics can meanwhile devote themselves to remedial and example classes with those who are less prepared. More workshops should be run to enhance the teaching of compulsory topics in view of the great variations in learning ability involved.

Conclusion

The New Academic Structure along with the NSS curriculum and DSE examination in Hong Kong has been introduced for good purposes, such as enabling more students to learn at depth before leaving for work, vocational training or proceeding to tertiary education. It seeks to reduce the examination orientation of secondary education and promotes more student-centred, enquiry-based and reflective practices of learning and teaching in schools and classrooms (Quong, 2011). Society as a whole can benefit in the long term as the educational level, creativity and critical thinking ability of the younger generation are raised. Unfortunately, the implementation of New Academic Structure has generated a series of controversies and heated debate both in the educational sector and the general public, ranging from its desirability and date of first implementation at the start, to the worth and content of Liberal Studies as a core NSS subject and the acceptability of DSE qualifications to local and overseas universities.

Based on the results and discussion above, it can be concluded that the implementation of the NSS curriculum and DSE examination in the four core subjects has so far not taken sufficient care of the needs of both the more able and less able. Providing adequate resource support, enhancing a paradigm shift about the nature of school learning, improving the quality of teacher training and conducting critical reviews of both subject matter and assessment methods from time to time are all needed for rectifying the situation and thereby raising the standards of all students even if the ability gap cannot be narrowed down substantially. Continuous monitoring and review of the situation for each of the core and elective major subjects are needed so that more definite and insightful conclusions about the catering of learning diversity can be drawn and more effective solutions can be identified.

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CROSSTABS, t-tests and CORRELATE for teachers' responses about the provision of educational resources

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Mathematics (CMI) Total = 46	Mathematics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
1. Receipt of extra resources to cater for learning diversity among students	Frequency of organising trips or visits to enhance the teaching of the subject	Pearson chi-square 3.209 sig. 0.36 > 0.05 Cramer's V 0.228 modest; sig. 0.36 > 0.05	Pearson chi-square 2.467 sig. 0.872 > 0.05 Cramer's V 0.147 modest; sig. 0.87 > 0.05	Pearson chi-square 0.137 sig. 0.987 > 0.05 Cramer's V 0.057 weak; sig. 0.987 > 0.05	Pearson chi-square 0.833 sig. 0.361 > 0.05 Cramer's V 0.408 moderate;, sig. 0.361 > 0.05	Pearson chi-square 2.398 sig. 0.663 > 0.05 Cramer's V 0.213 modest; sig. 0.663 > 0.05	Pearson chi-square 10.0* sig. 0.04 < 0.05 Cramer's V 0.577* strong; sig. 0.04 < 0.05
2. No. of types of resources provided	Frequency of organising trips or visits to enhance the teaching of the subject	Spearman rho -0.333* weak; sig. 0.008 < 0.05	Spearman rho 0.004 weak; sig. 0.974 > 0.05	Spearman rho 0.160 modest; sig. 0.311 > 0.05	Spearman rho 1.0 Very strong; sig. > 0.05	Spearman rho -0.068 weak; sig. 0.631 > 0.05	Spearman rho 1.0** Very strong; sig. 0.000 <0.001
3. Receipt of extra resources to cater for learning diversity	No. of new teaching strategies for the subject	T-test 2.505* df 61 sig. 0.015 < 0.05 Cohen's d 0.71, moderate;	T-test -1.38 df 56 sig. 0.173 > 0.05 Cohen's d -0.38, modest;	T-test 1.972 df 44 sig. 0.055 > 0.05 Cohen's d 0.59, moderate;	T-test -0.64 df 6 sig. 0.546 > 0.05 Cohen's d 0.44, modest;	T-test 1.412 df 51 sig. 0.164 > 0.05 Cohen's d 0.43, modest;	T-test -0.752 df 10 sig. 0.47 > 0.05 Cohen's d 0.95, moderate;
4. No. of other types of resources provided by the school	No. of new teaching strategies for the subject	Pearson's r 0.355* moderate; sig. 0.004 < 0.05	Pearson's r 0.268* modest; sig. 0.04 < 0.05	Pearson's r 0.210 moderate; sig. 0.162 > 0.05	Pearson's r -0.321 moderate; sig. 0.036*<0.05	Pearson's r 0.366* moderate; sig. 0.007 < 0.05	Pearson's r 0.251 modest; sig. 0.408 > 0.05
5. Receipt of extra resources to cater for learning diversity	No. of teaching strategies to cope with individual differences	T-test 3.869** df 24.846 sig. 0.001 < 0.05 Cohen's d 1.09, strong effect	T-test 1.386 df 56 sig. 0.171 > 0.05 Cohen's d -0.38, modest effect	T-test 1.378 df 44 sig. 0.175 > 0.05 Cohen's d 0.41, modest effect	T-test 0.284 df 7 sig. 0.785 > 0.05 Cohen's d 0.19, weak effect	T-test 1.053 df 51 sig. 0.297 > 0.05 Cohen's d 0.33, modest effect	T-test 1.602 df 12 sig. 0.135 > 0.05 Cohen's d 1.14, strong effect
6. No. of other types of resources provided by the school	No. of teaching strategies to cope with individual differences	Pearson's r 0.542* strong; sig. 0.000 <0.001	Pearson's r 0.268* modest; sig. 0.04 < 0.05	Pearson's r 0.249 modest; sig. 0.095 > 0.05	Pearson's r 0.329 moderate; sig. 0.098 > 0.05	Pearson's r 0.32* moderate; sig. 0.007 < 0.05	Pearson's r 0.449 moderate; sig. 0.093 > 0.05

CROSSTABS, t-tests and CORRELATE for teachers' responses about the provision of educational resources (continued)

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Mathematics (CMI) Total = 46	Mathematics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
7. No. of other types of resources provided by the school	Helpfulness of trips/visits for weaker students to enhance learning	Spearman rho 0.194 modest; sig. 0.128 > 0.05	Spearman rho 0.110 modest; sig. 0.408 > 0.05	Spearman rho 0.148 modest; sig. 0.327 > 0.05	Spearman rho 0.236 modest; sig. 0.123 > 0.05	Spearman rho 0.113 modest; sig. 0.419 > 0.05	Spearman rho 0.182 modest; sig. 0.59 > 0.05
8. Receipt of extra resources to cater for learning diversity among students	NSS curriculum leading to the use of new strategies for teaching the subject	Pearson chi-square 7.805* sig. 0.005 < 0.05 Phi 0.352* moderate; sig. 0.005 < 0.05	Pearson chi-square 3.379 sig. 0.185 > 0.05 Phi 0.239 modest; sig. 0.185 > 0.05	Pearson chi-square 3.808* sig. = 0.05 Phi /Cramer's V 0.288* modest; sig. = 0.05	Pearson chi-square 14.407 sig. 0.118 > 0.05 Phi/Cramer's V 0.77 strong; sig. 0.118 > 0.05	Pearson chi-square 1.411 sig. 0.235 > 0.05 Phi/Cramer's V 0.163 modest; sig. 0.235 > 0.05	Pearson chi-square 20.15 sig. 0.125 > 0.05 Phi 1.245 very much stronger; Cramer's V 0.88 very strong; sig. 0.125 > 0.05

* significant at the 0.05 level

** significant at the 0.001 level

degree of correlation – described as strong / modest / weak where appropriate

CROSSTABS, t-tests and CORRELATE for teachers' responses about teaching and learning strategies

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Mathematics (CMI) Total = 46	Mathematics (EMI) Total = 44	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
9. Receipt of extra resources to cater for learning diversity among students	NSS curriculum bringing a shift in focus from textbooks to other forms of learning and teaching materials	Pearson chi-square 0.001 sig. 0.975 >0.05 Phi 0.004 weak; sig. 0.975 >0.05	Pearson chi-square 5.008 sig. 0.082 >0.05 Phi 0.291 modest; sig. 0.082 >0.05	Pearson chi-square 0.971 sig. 0.324 >0.05 Phi 0.145 modest; sig. 0.324 >0.05	Pearson chi-square 1.918 sig. 0.383 >0.05 Phi 0.277 modest; sig. 0.383 >0.05	Pearson chi-square 0.842 sig. 0.359 >0.05 Phi 0.126 modest; sig. 0.359 >0.05	Pearson chi-square 17.4* sig. 0.002 <0.05 Phi 1.077* very strong; sig. 0.002 <0.05
10. Receipt of extra resources to cater for learning diversity among students	NSS curriculum encouraging students to learn beyond the confines of the classroom	Pearson chi-square 0.932 sig. 0.334 > 0.05 Phi 0.122 modest; sig. 0.334 > 0.05	Pearson chi-square 1.27 sig. 0.53 > 0.05 Phi 0.15 modest; sig. 0.53 > 0.05	Pearson chi-square 0.753 sig. 0.385 > 0.05 Phi 0.128 modest; sig. 0.385 > 0.05	Pearson chi-square 0.753 sig. 0.385 > 0.05 Phi 0.128 modest; sig. 0.385 > 0.05	Pearson chi-square 0.515 sig. 0.473 > 0.05 Phi 0.099 weak; sig. 0.473 > 0.05	Pearson chi-square 16.000* sig. 0.003 < 0.05 Phi 1.033* very strong; sig. 0.003 < 0.05
11. Receipt of extra resources to cater for learning diversity among students	Use of teaching strategies to cope with individual differences	Pearson chi-square 7.159 sig. 0.28 > 0.05 Phi 0.337* moderate; sig. 0.028 < 0.05	Pearson chi-square 5.01 sig. 0.82 > 0.05 Phi 0.29 modest; sig. 0.08 > 0.05	Pearson chi-square 2.807 sig. 0.09 > 0.05 Phi 0.247 strong; sig. 0.094 > 0.05	Pearson chi-square 2.679 sig. 0.262 > 0.05 Phi 0.327 moderate; sig. 0.262 > 0.05	Pearson chi-square 0.040** sig. 0.0000<0.05 Phi 0.027 weak; sig. 0.842 > 0.05	Pearson chi-square 3.943 sig. 0.684 > 0.05 Phi 0.513 strong; sig. 0.684 > 0.05
12. NSS curriculum leading to a shift in focus from textbooks to other materials	NSS curriculum encouraging students to learn beyond the confines of the classroom	Pearson chi-square 5.377* sig. 0.02 < 0.05 Phi 0.292* modest; sig. 0.020<0.05*	Pearson chi-square 7.623 sig. 0.006 < 0.05 Phi 0.359 modest; sig. 0.006 < 0.05	Pearson chi-square 4.108* sig. 0.043 > 0.05 Phi 0.299 modest; sig. 0.043 < 0.05	Pearson chi-square 1.918 sig. 0.383 > 0.05 Phi 0.277 modest; sig. 0.383 > 0.05	Pearson chi-square 1.122 sig. 0.29 > 0.05 Phi 0.145 modest; sig. 0.29 > 0.05	Pearson chi-square 15.563* sig. 0.004 < 0.05 Phi 1.019* very strong; sig. 0.004 < 0.05

* significant at the 0.05 level

** significant at the 0.001 level

degree of correlation – described as strong / modest / weak where appropriate

CROSSTABS, t-tests and CORRELATE for teachers' responses about continuous assessment

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
13. Complexity in daily assessment	Easiness in implementing school-based assessment	Pearson chi-square 12.51* sig. 0.051 > 0.05 Phi 0.446* moderate; sig. 0.051 > 0.05 Spearman rho 0.411** moderate; sig. 0.001 Kendall's tau-b 0.378** moderate; sig. 0.000 < 0.001	Pearson chi-square 21.593 sig. 0.001 < 0.05 Phi 0.605** strong; sig. 0.08 > 0.05 Spearman rho 0.465** moderate; sig. 0.001 Kendall's tau-b 0.429** moderate; sig. 0.000 < 0.001	Pearson chi-square 15.278 sig. 0.084 > 0.05 Phi/Cramer's V 0.537 modest; sig. 0.084 > 0.05 Spearman rho 0.355* moderate; sig. 0.009 < 0.05 Kendall's tau-b 0.330* moderate; sig. 0.008 < 0.05	Pearson chi-square 21.042* sig. 0.050 Phi 1.184* very strong; sig. 0.05 Spearman rho 0.56* strong; sig. 0.03 < 0.05 Kendall's tau-b 0.51* strong; sig. 0.023 < 0.05
14. Complexity in daily assessment	Fairness in implementing school-based assessment	Pearson chi-square 11.789 sig. 0.067 > 0.05 Phi 0.433 moderate; sig. 0.67 > 0.05 Spearman rho -0.192 modest; sig. 0.132 > 0.05 Kendall's tau-b -0.169 modest; sig. 0.112 > 0.05	Pearson chi-square 16.807 sig. 0.32 > 0.05; Phi 0.534* modest; sig. 0.032 < 0.05 Spearman rho -0.219 modest; sig. 0.096 > 0.05 Kendall's tau-b -0.211 modest; sig. 0.096 > 0.05	Pearson chi-square 4.941 sig. 0.839 > 0.05 Phi 0.305 modest; sig. 0.839 > 0.05 Spearman rho -0.016 weak; sig. 0.910 > 0.05 Kendall's tau-b -0014 weak; sig. 0.910 > 0.05	Pearson chi-square 21.459* sig. 0.044 < 0.05 Phi 1.196* very strong; sig. 0.044 < 0.05 Spearman rho 0.043 weak; sig. 0.879 > 0.05 Kendall's tau-b 0.027* weak; sig. 0.043 < 0.05
15. Complexity in daily assessment	Difficulty in implementing the SBA of Listening	Pearson chi-square 11.818 sig. 0.066 > 0.05 Phi 0.433 moderate; sig. 0.066 > 0.05 Spearman rho -0.294* modest; sig. 0.019 < 0.05 Kendall's tau-b -0.275** modest; sig. 0.010 < 0.05	Pearson chi-square 3.108 sig. 0.540 > 0.05 Phi 0.23 modest; sig. 0.54 > 0.05 Spearman rho 0.092 weak; sig. 0.488 > 0.05 Kendall's tau-b 0.085 weak; sig. 0.519 > 0.05	/	/

CROSSTABS, t-tests and CORRELATE for teachers' responses about continuous assessment (continued)

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
16. Complexity in daily assessment	Difficulty in implementing the SBA of Reading	Pearson chi-square 5.916 sig. 0.433 > 0.05 Phi 0.306 moderate; sig. 0.433 Spearman rho -0.278* weak; sig. 0.028 < 0.05 Kendall's tau-b -0.257* modest; sig. 0.017 < 0.05	Pearson chi-square 6.510 sig. 0.369 >0.05 Phi 0.332 moderate; sig. 0.369 Spearman rho -0.007 weak; sig. 0.961 >0.05 Kendall's tau-b -0.006 weak; sig. 0.957 >0.05	/	/
17. Complexity in daily assessment	Difficulty in implementing the SBA of Writing	Pearson chi-square 8.074 sig. 0.233 > 0.05 Spearman rho -0.283* modest; sig. 0.024 < 0.05 Kendall's tau-b -0.255* modest; sig. 0.016 < 0.05	Pearson chi-square 4.046 modest; sig. 0.400 >0.05 Spearman rho -0.141 modest; sig. 0.288 >0.05 Kendall's tau-b -0.133 modest; sig. 0.263 > 0.05	/	/
18. Complexity in daily assessment	Difficulty in implementing the SBA of Speaking	Pearson chi-square 12.203 sig. 0.058 > 0.05 Phi 0.44 moderate; sig. 0.058 > 0.05 Spearman rho -0.398** moderate; sig. 0.001 Kendall's tau-b -.370** moderate; sig. 0.000 < 0.05	Pearson chi-square 8.01 sig. 0.432 > 0.05 Phi 0.368 moderate; sig. 0.432 > 0.05 Spearman rho -0.101 weak; sig. 0.448 > 0.05 Kendall's tau-b -0.092 weak; sig. 0.401 > 0.05	/	/
19. Complexity in daily assessment	Difficulty in implementing the SBA of Integrated Skills	Pearson chi-square 4.426 sig. 0.619 > 0.05 Phi 0.265 modest; sig. 0.619 > 0.05 Spearman rho -0.187 modest; sig. 0.142 > 0.05 Kendall's tau-b -0.172 modest; sig. 0.126 > 0.05	Pearson chi-square 2.712 sig. 0.607 > 0.05 Phi 0.214 modest; sig. 0.607 > 0.05 Spearman rho -0.126 modest; sig. 0.341 > 0.05 Kendall's tau-b -0.117 modest; sig. 0.305 > 0.05	/	/

CROSSTABS, t-tests and CORRELATE for teachers' responses about continuous assessment (continued)

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
20. Provision of extra teacher training for updating their understanding of the new assessment framework	Difficulty in implementing the SBA of Listening	Pearson chi-square 3.049 sig. 0.384 > 0.05 Phi 0.220 modest; sig. 0.384 > 0.05 Spearman rho 0.175 modest; sig. 0.17 Kendall's tau-b 0.171 modest; sig. 0.092 > 0.05	Pearson chi-square 0.831 sig. 0.660> 0.05 Phi 0.119 strong; sig. 0.660 > 0.05 Spearman rho 0.21 moderate; sig. 0.876 Kendall's tau-b 0.020 weak; sig. 0.865 > 0.05	/	/
21. Provision of extra teacher training for updating their understanding of the new assessment framework	Difficulty in implementing the SBA of Reading	Pearson chi-square 1.776 sig. 0.620 > 0.05 Phi 0.1768 modest; sig. 0.62 > 0.05 Spearman rho 0.038 strong; sig. 0.74 > 0.05 Kendall's tau-b 0.371 moderate; sig. 0.620 > 0.05	Pearson chi-square 3.756 sig. 0.289 > 0.05 Phi 0.252 modest; sig. 0.289 > 0.05 Spearman rho -0.207 strong; sig. 0.116 > 0.05 Kendall's tau-b -0.197 moderate; sig. 0.095 > 0.05	/	/
22. Provision of extra teacher training for updating their under-standing of the new assessment framework	Difficulty in implementing the SBA of Writing	Pearson chi-square 1.430 sig. 0.698 > 0.05 Cramer's V 0.151 modest; sig. 0.698 > 0.05	Pearson chi-square 1.365 sig. 0.505 > 0.05 Phi/Cramer's V 0.152 modest; sig. 0.505 > 0.05	/	/
23. Provision of extra teacher training for updating their under-standing of the new assessment framework	Difficulty in implementing the SBA of Speaking	Pearson chi-square 2.666 sig. 0.446 > 0.05 Cramer's V 0.206 modest; sig. 0.446 > 0.05	Pearson chi-square 2.43 sig. 0.657 > 0.05 Cramer's V 0.203 modest; sig. 0.657 > 0.05	/	/

CROSSTABS, t-tests and CORRELATE for teachers' responses about continuous assessment (continued)

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
24. Provision of extra teacher training for updating their under-standing of the new assessment framework	Difficulty in implementing the SBA of Integrated Skills	Pearson chi-square 1.520 sig. 0.678 > 0.05 Cramer's V -0.155 modest; sig. 0.678 > 0.05	Pearson chi-square 2.663 sig. 0.264 > 0.05 Cramer's V 0.212 modest; sig. 0.264 > 0.05	/	/
25. Proportion of teachers taken the assessment-related training offered by EDB or other professional training institutes	Difficulty in implementing the SBA of Listening	Pearson chi-square 5.150 sig. 0.821 > 0.05 Phi 0.286 modest; sig. 0.821 > 0.05 Cramer's V 0.165 modest; sig. 0.821 > 0.05 Spearman rho -0.114 modest; sig. 0.372 > 0.05 Kendall's tau-b -0.105 modest; sig. 0.342 > 0.05	Pearson chi-square 2.402 sig. 0.662 > 0.05 Phi 0.202 modest; sig. 0.662 > 0.05 Cramer's V 0.143 modest; sig. 0.662 > 0.05 Spearman rho -0.135 moderate; sig. 0.307 > 0.05 Kendall's tau-b 0.128 modest; sig. 0.246 > 0.05	/	/
26. Proportion of teachers taken the assessment-related training offered by EDB or other professional training institutes	Difficulty in implementing the SBA of Reading	Pearson chi-square 8.922 sig. 0.445 > 0.05 Phi 0.376 moderate; sig. 0.445 > 0.05 Spearman rho -0.131 modest; sig. 0.308 > 0.05 Kendall's tau-b -0.123 modest; sig. 0.283 > 0.05	Pearson chi-square 6.728 sig. 0.347 > 0.05 Phi 0.338 moderate; sig. 0.347 > 0.05 Spearman rho -0.011 weak; sig. 0.936 > 0.05 Kendall's tau-b -0.011 weak; sig. 0.925 > 0.05	/	/
27. Proportion of teachers taken the assessment-related training offered by EDB or other professional training institutes	Difficulty in implementing the SBA of Writing	Pearson chi-square 9.499 sig. 0.393 > 0.05 Spearman rho -0.209 modest; sig. 0.099 > 0.05 Kendall's tau-b -0.191 modest; sig. 0.070 > 0.05	Pearson chi-square 3.770 sig. 0.438 > 0.05 Spearman rho 0.40 modest; sig. 0.764 > 0.05 Kendall's tau-b 0.039 weak; sig. 0.745 > 0.05	/	/

CROSSTABS, t-tests and CORRELATE for teachers' responses about continuous assessment (continued)

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
28. Proportion of teachers taken the assessment-related training offered by EDB or other professional training institutes	Difficulty in implementing the SBA of Speaking	Pearson chi-square 0.910 sig. 0.282 > 0.05 Phi 0.416 moderate; sig. 0.282 > 0.05 Spearman rho -0.284* modest; sig. 0.024 < 0.05 Kendall's tau-b -0.266* modest; sig. 0.006 < 0.05	Pearson chi-square 2.431 sig. 0.657 > 0.05 Phi 0.203 modest; sig. 0.657 > 0.05 Spearman rho 0.138 modest; sig. 0.298 > 0.05 Kendall's tau-b 0.132 modest; sig. 0.287 > 0.05	/	/
29. Proportion of teachers taken the assessment-related training offered by EDB or other professional training institutes	Difficulty in implementing the SBA of Integrated Skills	Pearson chi-square 6.261 strong; sig. 0.713 > 0.05 Phi 0.315 moderate; sig. 0.713 > 0.05 Spearman rho -0.181 modest; sig. 0.157 > 0.05 Kendall's tau-b -0.167 modest; sig. 0.123 > 0.05	Pearson chi-square 4.526 moderate; sig. 0.339 > 0.05 Phi 0.277 modest; sig. 0.339 > 0.04 Spearman rho -0.146 modest; sig. 0.269 > 0.05 Kendall's tau-b -0.140 modest; sig. 0.238 > 0.05	/	/
30. Proportion of teachers trained in assessment	Pressure on teachers due to the SBA of Independent Enquiry Studies projects	/	/	Pearson chi-square 7.767 sig. 0.101 > 0.05 Phi 0.383 moderate; sig. 0.101 > 0.05 Spearman rho 0.231 modest; sig. 0.096 > 0.05 Kendall tau-b 0.223 modest; sig. 0.101 > 0.05	Pearson chi-square 15.956* sig. 0.014 < 0.05 Phi 1.031 very strong; sig. 0.14 > 0.05 Spearman rho 0.067 very weak; sig. 0.813 > 0.05 Kendall tau-b 0.05 weak; sig. 0.865 > 0.05

CROSSTABS, t-tests and CORRELATE for teachers' responses about continuous assessment (continued)

Variable 1 (Independent)	Variable 2 (Dependent)	English Language Total = 63	Chinese Language Total = 63	Liberal Studies (CMI) Total = 53	Liberal Studies (EMI) Total = 15
		Test stat./ effect size	Test stat./ effect size	Test stat./ effect size	Test stat./ effect size
31. Proportion of teachers trained in assessment	Level of difficulty in setting internal examination questions	/	/	Pearson chi-square 3.48 sig. 0.746 > 0.05 Phi 0.256 modest; sig. 0.746 > 0.05 Spearman rho -0.058 weak; sig. 0.682 > 0.05 Kendall tau-b -0.54 strong; sig. 0.657 > 0.05	Pearson chi-square 22.355* sig. 0.008 < 0.05 Phi 1.221* very strong; sig. 0.008 > 0.05 Spearman rho 0.133 weak; sig. 0.636 > 0.05 Kendall tau-b 0.114 modest; sig. 0.704 > 0.05

* significant at the 0.05 level
** significant at the 0.001 level
degree of correlation – described as strong / modest / weak where appropriate

新高中課程程度的學習差異初步研究

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摘要

香港學生到了中學階段出現不斷擴大的學習能力差異，情況在與三年制新高中課程同時推行的 2012 年首屆中學文憑試表現得相當明顯。本研究審視學校如何照顧不同學習能力學生需要的情況，所需資料是透過多間學校的四個核心科目科主任填寫網上問卷獲得。研究發現包括了資源短缺，使用探究性教學法和自發性學習策略的頻率偏低，在學習機會伸延到課室外取得相當進展，以及評核安排上有不少缺點。教師、校長和政府必須協力合作，使用有效方法改善新高中課程和中學文憑試的推行，使不同學習能力的學生都能獲益。改善情況的方法包括減輕教師工作量，提供額外人手，有更多教師投入的持續性課程評估，製作適時的物質資源，改變教學法，以及改革考試以便促進學習而非只是量度。

關鍵詞

學習差異，新高中課程，中學文憑試，網上問卷，教學策略