# 香港教師中心學報

# Hong Kong Teachers' Centre Journal


第十二卷

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教育局

Education Bureau

# 香港教師中心

香港教師中心（教師中心）是根據1984年教育統籌委員會《第一號報告書》的建議而於1989年正式成立的。教師中心成立的目標是不斷促進教師的專業發展和在職培訓，並為他們提供一個富鼓勵性、中立及沒有階級觀念的環境，使他們更能團結一致，發揮專業精神。此外，教師中心亦致力為教師提供互相切磋和交流經驗的機會，推動課程發展，鼓勵教師設計及試用新教材和教學法，協助發放教育資訊和宣傳教育理念，並配合教師興趣，組織各類社交與文娛活動。

教師中心不單為教師而設，也由教師管理。他們可以通過三層管理架構參與教師中心的管理工作。這管理架構包括一個諮詢管理委員會（諮管會）、一個常務委員會（常委會）和六個工作小組，負責教師中心的決策、監察和執行教師中心的不同工作及活動。

諮管會的工作主要是決定教師中心的策略和監察它的運作。諮管會由72名委員組成，其中35位由教育團體提名及選出，35位由教師提名及選出，另外兩位由教育局常任秘書長委任。

常委會是諮管會的行政機構，與教師中心的日常運作和活動有密切的關係。常委會的主席和兩位副主席由諮管會的主席和兩位副主席兼任，其他成員包括10位由諮管會提名及選出的諮管會委員，以及兩位教育局代表。

各工作小組負責教師中心內不同範疇的工作，包括專業發展小組、出版小組、活動小組、教育研究小組、章程及會籍小組和推廣小組。各小組的成員均是諮管會的委員。

教師中心位於教育局九龍塘教育服務中心內，交通便捷，毗鄰港鐵九龍塘站，另有多條巴士及小巴專線可直達。中心設施齊備，內有電腦服務、消閒雜誌、議事區、休憩區及專題展板等。同時，教育局九龍塘教育服務中心設有演講廳和多用途會議室，供教師中心舉辦各類會議、講座及工作坊等活動。歡迎各位教師使用教師中心的服務。

詳情請瀏覽本中心的網頁：www.edb.gov.hk/hktc。

# Hong Kong Teachers' Centre

The Hong Kong Teachers' Centre (the Centre) was formally established in 1989 in accordance with a recommendation of the Education Commission Report No. 1 published in 1984. The Centre aims to promote continuous professional development and enrichment among teachers, and to foster among them a greater sense of unity and professionalism in an encouraging, neutral and non-hierarchical environment. Specific objectives of the Centre include the provision of opportunities for teachers to meet and exchange ideas and share experiences; the promotion of curriculum development; the development and trying out of new teaching aids and approaches; the dissemination of news and ideas concerning education; and the organisation of social, cultural and recreational activities for teachers.

The Centre has a three-tier management structure to help plan and run its activities - an Advisory Management Committee (AMC), a Standing Committee (SC) and six Sub-committees. They are responsible for policy-making, monitoring and implementation of various duties and activities.

The AMC is a policy-making and monitoring body with a total membership of 72. These include 35 members nominated by and elected from education organisations, 35 members nominated by and elected from teachers, and 2 members appointed by Permanent Secretary for Education.

The SC is the executive sub-structure of the AMC. It is concerned with the day-to-day functioning of the Centre and the running of its activities. The SC comprises the AMC Chairperson and 2 Vice Chairpersons, 10 other members elected by and from the AMC and the 2 representatives from Education Bureau (EDB).

The six Sub-committees are working groups responsible for specific areas of work of the Centre. They include Professional Development, Publication, Activities, Educational Research, Constitution & Membership and Promotion. Members of the sub-committees are also members of the AMC.

Access to the Centre is convenient for the visitors. The Centre is located inside the EDB Kowloon Tong Education Services Centre which is in the vicinity of the MTR Kowloon Tong Station. Besides, it can be reached by buses or minibuses. It provides a number of workstations, leisure magazines, sharing corner, resting area and display-boards, etc. Moreover, multi-purpose meeting rooms and conference rooms for organising seminars, workshops and meetings are available at the EDB Kowloon Tong Education Services Centre. Teachers are welcome to use the facilities of the Centre.

For more details, please visit our website at www.edb.gov.hk/hktc.

# 香 港 教 師 中 心 學 報
# Hong Kong Teachers' Centre Journal

《香港教師中心學報》（《學報》）乃香港教師中心一年一度出版的學術性刊物，內容以教育研究、教育行動研究及教學經驗分享為主。《學報》的投稿者多來自本港及海外的教師、師訓機構的導師、教育研究人員及學者。《學報》主要分發給本港各幼稚園、小學、中學及大專院校，而公眾人士亦可到教師中心網頁（www.edb.gov.hk/hktc）閱覽《學報》電子版。

以下為《學報》之顧問及編輯委員名單。

The Hong Kong Teachers' Centre Journal (HKTC Journal) is an annual refereed publication of the HKTC. It publishes articles on areas pertaining to educational research, action research and teaching practice in schools. Our contributors include school teachers, teacher educators and academics researching on education from Hong Kong and other places. The HKTC Journal will be distributed to kindergartens, primary and secondary schools and universities in Hong Kong. Its electronic version can also be accessed from the HKTC website (www.edb.gov.hk/hktc).

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# 主編序

《香港教師中心學報》是一份教育研究及教師專業教學的分享刊物。過去得到很多學者及教師的支持，使學報能順利出版，今期也不例外。本期主題「新高中學制──學生發展、教師發展、學校發展」，同樣得到各方熱心教育人士提供寶貴的研究及分享文章，連同特邀稿文，本期共選刊了十二篇。

經評審後，第一部分共收錄了六篇專題文章，內容包括：2012 年香港中學文憑通識教育科考試的閱卷與評級程序、新高中課程下學校管理及教學人員眼中的校本評核、新高中課程程度的學習差異初步研究、通識教育科的現況及前瞻、新高中視覺藝術科考評制度對課程潛在的影響、應用學習之反思與檢討。內容非常豐富，這些研究都是從資料數據及課程實踐中得到的經驗分享，且特別針對過去實施了新高中課程後的檢視與反思，實在很值得同行參考及研究。

第二部分是關於理論及政策評論，共有三篇文章，內容包括：測試分數可信程度研究、臺灣 12 年國民基本教育體制研究、新世紀後香港基礎教育的改革。這部分的內容看來硬資料較多，但寶貴的是從不同角度看基礎教育正是我們要研究的範圍。香港正在研究十五年免費教育的課題，對學前教育的探討同樣是香港教育制度的熱門課題，這部分的研究對一直關注學前教育的前線工作者尤為寶貴。

第三部分是教育實踐與經驗分享，共有三篇文章。內容包括：教師對通識教育科文憑試與高階思維能力培育關係認知的探求、在香港推行國民教育的討論、教師如何在校本課程中引入口述歷史教學。這部分是前線教師的實踐分享，一直都很受教師歡迎，因為教學講的是實戰，是具體操作，並檢視成效。因此，很受教師歡迎。

最後，要衷心感謝為學報擔任評審的專家們。學報能順利出版，評審員的功勞不可少，我在這兒非常感謝尹紹賢先生、何世昌先生、何景安先生、李子建教授、李宏峯先生、李偉雄先生、李國毅先生、周蘿茜女士、侯傑泰教授、胡少偉博士、胡志偉博士、英汝興教授、袁達榮先生、曹錫光博士、梁兆棠先生、梁志鏘博士、梁炳華博士、梁偉傑先生、梁雪梅女士、郭禮賢博士、黃素蘭博士、楊沛銘博士、楊思賢博士、葉建源先生、雷其昌先生、趙淑媚博士、盧兆興教授、戴繼志先生、魏國珍女士、羅天佑博士及羅慧燕博士。我謹代表學報編輯委員會表達我們真誠的謝意。

《香港教師中心學報》主編
簡加言
二零一三年十二月

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# *Marking and grading procedures for 2012 HKDSE Liberal Studies examination*

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## Abstract

Liberal Studies (LS) is a new core subject for all candidates attending the 2012 Hong Kong Diploma of Secondary Education (HKDSE) Examination. Standards-referenced reporting (SRR) is adopted to report candidate performance, in terms of levels (from 1 to 5). Some LS teachers expressed doubts after the announcement of the grading results of the 2012 HKDSE LS subject. To address these concerns, this paper aims at reviewing the essence of marking and grading procedures for the 2012 HKDSE LS Examination. It is expected that the public could have more confidence in the attainment levels conferred by the Authority after having a clear and overall picture about the whole procedure.

## Keywords

Hong Kong Diploma of Secondary Education Examination, Liberal Studies, standards-referenced reporting, marking and grading

## 1. Introduction

Liberal Studies (LS) is a new core subject for all candidates attending the 2012 Hong Kong Diploma of Secondary Education (HKDSE) Examination. In the HKDSE Examination, every subject adopts standards-referenced reporting (SRR) to report candidates' assessment results. In SRR, candidates' assessment results are reported, in terms of levels (from 1 to 5) with reference to explicit and fixed standards of performance stipulated as a set of level descriptors for a given subject. SRR has been adopted in Chinese Language and English Language of the Hong Kong Certificate of Education Examination (HKCEE) since 2007. Some LS teachers raised concerns after the announcement of the LS grading results in the 2012 HKDSE Examination. One of the controversial points is that

the percentage of LS candidates obtaining Level 2 or above amounts to some 90%, which may seem to be "unreasonably" high. In this regard, this paper aims at explaining the essence of marking and grading procedures of LS. It is expected that the public will have more confidence in the attainment levels conferred by the Hong Kong Examination and Assessment Authority after having knowledge about the marking and grading procedures.

In the following, the relevant marking and grading procedures of LS, and the related research studies and results will be highlighted. First, the LS assessment framework will be outlined. Secondly, marking arrangement for examination papers of LS will be mentioned; especially on the measures ensuring the reliability and validity in the marking process. Thirdly, moderation process of school raw marks on SBA will be studied, which aims at ensuring fairness and across-school comparability. After discussing marking process of exam papers and moderation process of SBA raw marks, the grading process, which is an essential part to determine the cut scores for various performance levels, will be examined.

# 2. Assessment framework of LS

There are two components in the assessment of LS, namely: (i) Public Examination, and (ii) School-based Assessment. In the component of Public Examination, there are two papers – Paper 1 and Paper 2. The Public Examination component amounts to 80% of the total (Paper 1: 50% and Paper 2: 30%), and the SBA component amounts to the rest, that is 20%.

Paper 1 consists of data-response questions, all of which have to be answered. Data-response questions aim to assess abilities such as identification, application and analysis of given data. The data define the scope and reflect the complexity or controversial nature of the issues involved; and such kind of questions also reflects the cross-modular nature of the curriculum.

Paper 2 consists of three extended-response questions. Candidates are required to answer one question only. Extended-response questions with data as stimulus information provide a wider context for candidates to demonstrate various high-order skills, such as drawing critically on relevant experience, creative thinking, and communicating in a systematic manner.

In addition to attending the public examination, each candidate of LS is required to complete an Independent Enquiry Study (IES) on a selected social issue, which is adopted as the mode of SBA in LS. The IES extends over a certain period of time and requires students to demonstrate various skills, such as data gathering, and analysis and presentation of findings. The IES is divided into three stages. The first is a preparatory

stage during which a candidate formulates the project title, specifies the objectives, considers suitable method(s), decides on the mode of presentation, plans for the enquiry and collects feedback from his/her classmates on the project plan. The second stage mainly involves data collection and organization. The third stage is the completion of the product which includes analysis and evaluation of data, conclusions on the results of the enquiry and a reflection on the enquiry process.

# 3. Marking arrangement

## 3.1 Marker training

The HKDSE LS examination consists of open-ended questions focusing on the enquiry of current social issues in accordance with the nature of the subject. There was a worry that the number of qualified markers may not be sufficient for the subject, as LS is a new core subject for all candidates of HKDSE Examination. Therefore, the Authority conducted three rounds of marker training sessions in the year 2010-2011. During the first round (from October to December 2010), a total of 10 sessions were completed, and 569 teachers participated. The second round comprising 9 sessions, was conducted from January to February 2011 and 538 teachers participated. The third round was between June and October 2011 and 594 teachers participated in 9 training sessions. Each training session comprised a 3-hour markers' meeting and post-meeting individual marking at the Assessment Centre. The training aimed to:

- allow teachers to experience the marking process, including the markers' meeting and the marking standardization process;
- provide opportunities for teachers to better understand the marking criteria and the standards of HKDSE LS;
- prepare teachers to be HKDSE LS markers and Assistant Examiners (AEs);
- familiarise teachers with the Onscreen Marking (OSM) system;
- collect marking statistics of teacher participants to facilitate the selection of markers for the live examination.

During the markers' meeting, participants were briefed of the marking criteria, standards and marking guidelines, illustrated by authentic performance in the sample scripts. Participants trial-marked some sample scripts. The scripts were then discussed in group meetings led by AEs who were experienced LS markers. Through the group discussions, with group size kept at 15 at most, participants aligned their marking standards and further clarified the marking criteria.

After the markers' meeting, participants marked 15 scripts of Papers 1 and 2 respectively on their own at the Assessment Centre. The marks of these scripts had been standardised by experienced markers in a previous exercise. Marking statistics, comparing

the characteristics of marks awarded by participants with that by experienced markers, were computed and sent back to participants as feedback. Marking statistics on the following aspects were discerned.

- *Mean of Mark Discrepancies*: This is the average of the discrepancies between the marks awarded by the participant and that of experienced markers.
- *Standard Deviation of Mark Discrepancies*: This is the variation of the discrepancies between the marks awarded by the participant and that of experienced markers reflecting the marking consistency; i.e., the lower the figure, the higher the consistency of marking performance.
- *Difference between the Mark Range of the Participant and that of Experienced Markers*: This shows the degree of discrimination relative to that of experienced markers.
- *Correlation between Marks of the Participant and that of Experienced Markers*: This indicates the degree of agreement between the marks awarded by the participant and those awarded by experienced markers, in terms of the rank order.

In the first round, amongst the 569 participants (681 enrolled) of the training, 383 joined the individual marking after the markers' meeting. In the second round, out of the 538 participants (606 enrolled), 394 joined the individual marking. During the last round of training, 542 out of the 594 participants (660 enrolled) completed the individual marking. Therefore, a total of 1,319 teachers participated in both the markers' meeting and individual marking. The following tables show the overall picture of marking statistics for the participants of individual marking in different rounds:

Table 1a: The averages of the statistical measures on marking performance of the participants of individual marking (Paper 1)

| **Statistical measure on marking performance (Max mark approx. = 20 )** | **1st round** | **2nd round** | **3rd round** | **Overall** |
|---|---|---|---|---|
| Mean of mark discrepancies | 1.83 | 1.93 | 1.91 | 1.89 |
| Standard deviation of mark discrepancies | 2.36 | 2.39 | 2.40 | 2.39 |
| Difference between the mark range of the participant and that of experienced markers | -0.37 | -0.46 | -0.42 | -0.42 |
| Correlation between marks of the participant and that of experienced markers | 0.84 | 0.84 | 0.81 | 0.83 |

Table 1b: The percentages of the participants of individual marking fulfilling certain criteria (Paper 1)

| **Criterion** | **1st round** | **2nd round** | **3rd round** | **Overall** |
|---|---|---|---|---|
| Mean of mark discrepancies between 4 marks and -4 marks[(a)] | 97.65 | 96.95 | 97.35 | 97.32 |
| Standard deviation of mark discrepancies less than 2 marks[(b)] | 19.84 | 18.27 | 18.71 | 18.94 |
| Difference between the mark ranges within ± 4 marks[(c)] | 94.78 | 93.65 | 94.90 | 94.44 |
| Correlation greater than or equal to 0.7[(d)] | 97.13 | 96.45 | 96.03 | 96.54 |

Notes:

(a) 4 marks were determined as the thresholds for mean of mark discrepancies by considering the need of third marking, and corresponding resources available and time constraints.

(b) 2 marks were determined as the thresholds for standard deviation of mark discrepancies by considering the need of third marking, and corresponding resources available and time constraints.

(c) Provided that the variations of marks assigned are identical between two markers, it can be shown that the difference in mark range being greater than 4 is rare, with chance being equal to some 0.15.

(d) As a rule of thumb, in general correlation greater than or equal to 0.7 is regarded as high.

Table 2a: The averages of the statistical measures on marking performance of the participants of individual marking (Paper 2)

| **Statistical measure on marking performance (Max mark approx. = 20 )** | **1st round** | **2nd round** | **3rd round** | **Overall** |
|---|---|---|---|---|
| Mean of mark discrepancies | 0.88 | 0.90 | 1.15 | 1.00 |
| Standard deviation of mark discrepancies | 2.48 | 2.47 | 2.41 | 2.45 |
| Difference between the mark range of the participant and that of experienced markers | 1.37 | 1.24 | 1.22 | 1.27 |
| Correlation between marks of the participants and that of experienced markers | 0.72 | 0.73 | 0.74 | 0.73 |

Table 2b: The percentages of the participants of individual marking fulfilling certain criteria (Paper 2)

| **Criterion** | **1st round** | **2nd round** | **3rd round** | **Overall** |
|---|---|---|---|---|
| Mean of mark discrepancy between 4 marks and -4 marks | 96.87 | 96.70 | 96.98 | 96.85 |
| Standard deviation of mark discrepancy less than 2 marks | 18.54 | 18.02 | 20.42 | 18.99 |
| Difference between the mark ranges within ± 4 marks | 89.56 | 88.32 | 88.66 | 88.85 |
| Correlation greater than or equal to 0.7 | 65.27 | 69.29 | 72.21 | 68.92 |

For Paper 1, the averages in Table 1a displayed similar patterns in all the three rounds. The means of mark discrepancies were well within the "acceptable" level; i.e., below 4 marks. The mark ranges of the participants were just slightly smaller than that of the experienced markers, with an average for all participants being equal to -0.42 marks. The correlation was high with the overall figure being equal to 0.83. However, the averages of the standard deviations of mark discrepancies throughout these rounds were quite large; i.e., greater than 2 marks.

From Table 2a, it was observed that the performance of the participants in Paper 2 was quite similar to that in Paper 1, with good performance on average in terms of the mean of mark discrepancies, mark range and correlation, but slight under-performance for the item of standard deviation of mark discrepancies. The mean of mark discrepancies for Paper 2 was much closer to zero, though the correlation was lower than that in Paper 1.

From Tables 1b and 2b, an overwhelming majority performed satisfactorily in terms of the mean of mark discrepancies and mark range. The majority awarded marks that correlated well with that of the experienced markers, though the percentage of participants performing well in this aspect was much higher in Paper 1. For Paper 2, the percentage of participants with acceptable performance in terms of correlation and standard deviation of mark discrepancies had a slight increase from the first to the third Round. Based on these marking statistics, the percentage of discrepancy marking for Papers 1 and Paper 2 was (roughly) estimated to be around 20% for the live examination, which would be taken into consideration for manpower arrangement.

In a nutshell, a total of 28 training sessions were conducted in 2011-2012. A total of 1,319 teachers experienced the whole marking process and were familiarised with the OSM system. To facilitate the selection of markers, Principal Component Analysis (PCA) has been employed to derive an integrated marking performance indicator based on the four marking statistics so as to maximise the discrimination power. In addition

to the marking statistics, other factors, such as previous marking experiences, would be considered when selecting markers for the live examination of LS. A large majority of these participants performed satisfactorily with reference to a number of marking statistics; especially on the mean of mark discrepancies, difference between the mark ranges and correlation. This indicated that they were able to grasp the marking criteria and adopt the marking standard reasonably close to our experienced markers. On the other hand, there was room for improvement in the consistency of marking performance of these participants. In addition, 23 experienced LS teachers served as facilitators in group meetings and gained experience as AEs.

### 3.2 Markers' meeting and onscreen marking

Immediately after the completion of the LS public examination, the marking process was started. Markers' meetings with recruited markers were arranged in order to standardise the marking criteria and standards. Before the markers' meetings, a representative sample of candidate scripts was selected and marked by the Chief Examiner and a group experienced senior AEs whereby the consensus on marking standards and marking criteria were arrived at through professional discussion. Some of these standardised scripts were used for marking standardization, training and qualifying purposes. After the markers' meetings, markers then marked another set of standardised scripts which were used for testing whether they could grasp the marking standards and marking criteria properly so as to obtain the markers' qualification. Only those qualified markers would be allowed to mark scripts of the live examination.

In addition to manual procedures for ensuring marking quality, the Authority adopts innovative and advanced technologies to enhance the marking performance. In 2005, the Authority received funding from the government to modernise its information technology infrastructure, and to introduce OSM to improve the security, quality, reliability and efficiency of marking. The marking procedures with the use of OSM are outlined below:

- Examinations for candidates conducted;
- Examination scripts collected;
- Examination scripts scanned and images saved;
- Images of answers distributed to markers for viewing and marking via secure intranet system at designated Assessment Centres;
- Marks at question level and annotations by markers captured by the onscreen marking system.

For security reasons, marking is conducted at designated Assessment Centres. The primary function of these Assessment Centres is to facilitate onscreen marking of public examinations but they will also be used for the delivery and marking of a wide range of examinations and assessments, such as the Territory-wide System Assessment and a

variety of computer-based examinations. Moreover, facilities will be available for the training of examiners, markers, teachers and other assessment staff. The advantages of using OSM include the following aspects:

- Security: Secure storage of scanned images of scripts, and elimination of the physical movement of massive scripts;
- Marking: Real-time monitoring of marking consistency and quality control of marking, and flexible allocation of questions to markers;
- Efficiency: More efficient and flexible script management processes, and higher efficiency in mark calculation;
- Accuracy: Reduction of errors arising from mark entries, and elimination of errors associated with manual mark calculation and recording processes;
- Data Availability: More detailed analysis of candidates' performance, and more information on responses to individual questions and better feedback regarding candidates' performance.

In view of all the aspects mentioned above, OSM is considered as a better alternative to the conventional paper-based marking (PBM). Concerning marking quality, with the use of OSM a marker's performance could be continuously monitored by comparing his/her marks awarded on standardised scripts with that of experienced markers. Thus, marking problems identified could be rectified at an early stage. Besides, it also facilitates the sample checking conducted by AEs on certain scripts of each marker.

The Authority first introduced OSM in the 2007 HKCEE English writing paper. Afterwards, OSM was being implemented gradually in marking exam scripts for a number of subjects. To ensure that there is no adverse effect of OSM on the marking performance, the Authority has initiated a number of studies with tertiary institutes comparing OSM with PBM. A study (Coniam, 2009a, 2009b) examined English language essay scripts selected from the 2007 HKCEE English Language Paper 1B (Writing). To compare OSM with PBM, 30 markers, who had good rater statistics, were arranged to remark on paper 100 scripts, which they had marked onscreen nine months before. After the remarking, they were requested to complete a questionnaire in order to collect feedback on the exercise. From the questionnaire data, it was suggested that technologically, raters had no problems with OSM. Attitudinal differences surfaced, however, between new raters who had solely rated on screen as against experienced raters who had solely adopted PBM in their previous experiences. New raters felt that having to travel to a special marking centre was less of an inconvenience than did old raters. New raters, additionally, expressed a preference to mark on screen rather than on paper.

The statistical analysis of remarking data was conducted from two perspectives. The first involved classical measurement statistics. Correlations between the two forms of rating and the amount of discrepancy scripts (where a third rating was required) suggested

that no bias existed favouring either form of marking. Secondly, using multi-faceted Rasch measurement (MFRM), a five-faceted design was employed, modeling raters, test takers, input prompt materials, rating scales, and, especially, the marking medium. Results showed that all factors generally exhibited good data fit. For the method of marking - the major facet for investigation, the corresponding logit values of both methods were very close to zero. Therefore the hypothesis that the methods of marking (OSM and PBM) did not interfere scores awarded by markers was accepted.

There is another study (Coniam, 2010) which has similar objectives as the first one; but the subject concerned is Advanced Supplementary Level (ASL) Liberal Studies. The study involved 14 markers who had previously marked ASL Liberal Studies scripts on screen in the 2009 Hong Kong Advanced Level Examination. In the study, the 14 markers remarked on paper a number of the scripts that they had marked on screen in the 2009 examination. Using multi-faceted Rasch analysis, a five-faceted design was employed to model markers, test takers, input questions, rating scales and the marking medium. Results showed that all factors generally exhibited good data fit and suggested that the scores from OSM could be considered as reliable as those obtained from PBM.

### 3.3 Double marking arrangement

With regard to marking reliability, one of the public concerns is that there may be a considerable degree of variability when marking open-ended questions of LS. In this regard, the Authority has decided to adopt double marking in LS public examination. Any LS question of a candidate will be primarily marked by two markers. In case that prominent discrepancy occurs between the two markers' marks, third marking (i.e., discrepancy marking) will be undertaken. The average of the closest pair of marks[1] will be taken as the final mark of the question concerned. Fourth marking may be involved, if necessary, to settle down any controversies. Due to the use of OSM, which facilitates immediate distribution of scripts and flexible allocation of questions, double marking could be conducted on question basis. The four questions in Papers 1 and 2 attempted by a candidate in the public examination of LS will be marked by at least eight markers. Such an arrangement eliminates the chance that a candidate's assessment result will be dominated by a single marker who may be too harsh or too lenient.

The Authority had undertaken a study (HKEAA, 2011a) to examine the impact when adopting double marking in the LS questions. In the study, four data-response questions and four extended-response questions, and the corresponding marking guidelines were prepared in both Chinese and English. The full mark of each of these questions was more or less 20. These questions were attempted by some 1,300 students from 15 schools

1 In OSM, the sum of the closest pair of marks is compiled instead for the sake of computational convenience. This, in fact, implies that the full mark of a question is doubled.

covering a wide spectrum of performance levels. The student responses were marked by 18 markers using double marking (with discrepancy marking). Each student attempted one data-response question and one extended-response question, resulting totally 2,530 responses. For these 2,530 student responses, double marking was conducted. The corresponding statistics on marking discrepancies are shown below.

Table 3: Distribution of discrepancies in the study on double marking

| Abs Diff | Count | Percent | Cumulative percent |
|---|---|---|---|
| 0 | 413 | 16% | 16% |
| 1 | 749 | 30% | 46% |
| 2 | 592 | 23% | 69% |
| 3 | 368 | 15% | 84% |
| 4 | 226 | 9% | 93% |
| 5 | 100 | 4% | 97% |
| 6 | 51 | 2% | 99% |
| 7 | 20 | 1% | 100% |
| 8 | 9 | 0% | 100% |
| 9 | 1 | 0% | 100% |
| 10 | 1 | 0% | 100% |
| ALL | 2,530 | 100% | - |

Some 16% of total responses, which had differences greater than three, required discrepancy marking. In general, third marking was already sufficient to ensure that the differences between the closest pairs of marks were less than or equal to three marks. There were only a small proportion of responses that required fourth marking. The corresponding distribution of discrepancies after discrepancy marking is tabulated below.

Table 4: Distribution of discrepancies after discrepancy marking in the study on double marking

| Abs Diff | Count | Percent | Cumulative percent |
|---|---|---|---|
| 0 | 510 | 20% | 20% |
| 1 | 911 | 36% | 56% |
| 2 | 724 | 29% | 85% |
| 3 | 385 | 15% | 100% |
| ALL | 2,530 | 100% | - |

The closest pair of marks of a response was used for calculating the average, which was the final mark of the response. Provided that the "true" performance of a response did fall in between the closest pairs of marks, the difference between the final mark assigned and the "true" performance would be less than 1.5 marks; i.e., less than 10% of the full mark of the question concerned. The correlation between the marks in the closest pairs (retained after conducting double marking with discrepancy marking) was found to be equal to some 0.8. This reflected a high level of marking reliability.

In 2012 public examination of LS, it is found that the percentage of responses that requires discrepancy marking further decreases. It may be due to the fact that previous professional development courses and the targeted marker training sessions have familiarised school teachers with the marking criteria and standards of HKDSE LS.

# 4. SBA Moderation Process

### 4.1 The reasons of moderation

SBA is a salient feature of the HKDSE Examination. SBA refers to assessments administered in schools and marked by the students' own teachers. SBA in LS requires each student to carry out an Independent Enquiry Study (IES). The IES provides a valuable opportunity for students to independently carry out a focused enquiry into a contemporary issue of interest, and to present their views, ideas, findings, evaluations and personal reflections.

After receiving the raw SBA marks from schools, the Authority has to undertake the SBA moderation process. The main reason for carrying out moderation is to ensure the consistency of assessment standards across schools. Teachers know their students well and thus are best placed to judge their students' relative performance. However, they could not be aware of the standards of performance across all schools. Therefore, teachers in some schools may be harsher or more lenient in their judgment than teachers in other schools. Mark ranges of scores awarded in various schools may also be different from each other.

To resolve these problems, the Authority employs appropriate methods for "moderating" the raw SBA scores submitted by different schools to achieve the following:

- The comparability of SBA results across schools in order to ensure fairness for individual students and schools;
- The quality, reliability and validity of SBA results;
- Provision of useful feedback to schools for improving practice;
- In LS, the SBA moderation is conducted using statistical moderation based on examination results and supplemented with sample review.

### 4.2 Statistical moderation

Statistical moderation is particularly appropriate in situations where there is another measure available that can reflect SBA performance level. Typically this other measure will be students' performance in the public examination of that subject. An advantage of the method is that it can be carried out efficiently and impartially within a reasonable amount of time and resources. The key assumption is that the overall performance in the public examination of students in a school can properly reflect the SBA performance level of the same group of students. Generally speaking, this is a valid assumption in the context of many academic subjects in public examinations.

In the moderation process, the adjustments are applied only to school average and spread of raw SBA scores of students with reference to their public examination scores in the same school. Therefore, the ranking of students within a school remains unchanged after moderation. The school averages of examination scores are used to determine the corresponding performance levels on SBA, taking within-school correlations between students' raw SBA scores and examination scores into consideration (HKEAA, 2010).

### 4.3 Sample review

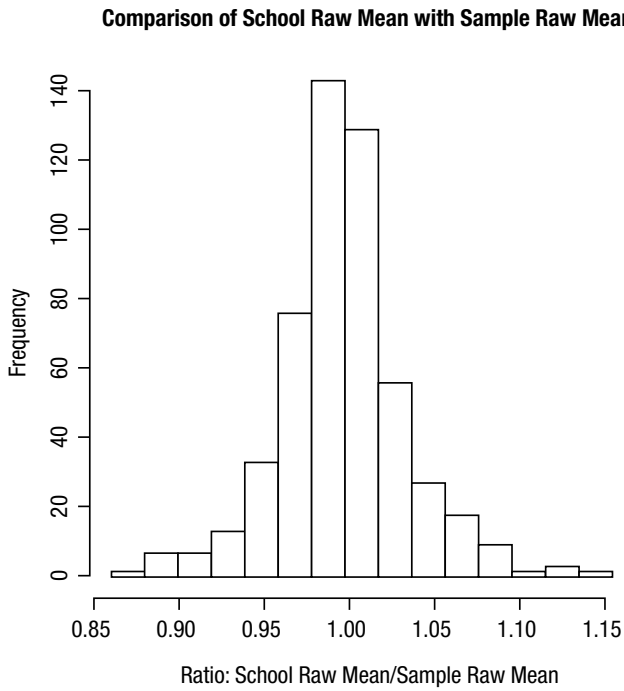
Some of the objectives of the SBA cannot be precisely assessed in the public examination due to different requirements. Moreover, students in SBA would possibly gain significant improvement under teachers' supervision due to the efficacy of assessment for learning. If only schools' public examination scores are used to adjust students' raw SBA scores, for some schools the statistical moderated results may not fully reflect the students' actual performance in the SBA; i.e., there may be some outlier schools whose statistically moderated scores differ greatly from the performance level demonstrated by students' SBA work. Therefore, for 2012 HKDSE LS, each school was required to submit six samples of students' work for reassessment which was conducted by a group of external assessors appointed by the Authority. The samples were chosen by the Authority using stratified random sampling. Students in each school were divided into a number of strata based on their raw SBA scores. Therefore, in each stratum the performance level of students on SBA should be similar with each other. Some students' work was then randomly chosen from each stratum. The stratified sampling method could ensure that a fairly small sample of students' work could adequately represent the full range of SBA performance of each school. For schools where only a few students were studying a particular subject, the work of all students had to be submitted.

All the LS samples were then reassessed with reference to the previous standardised exemplars and a set of stipulated assessment criteria. If prominent discrepancies between external assessors' scores and raw scores were observed, discrepancy marking would be conducted. It was observed that the discrepancy marking percentage was about 20% in 2012. The correlation between raw scores and results based on external assessment

amounted to 0.8. This reflected that the marking standards of school teachers were generally in line with that based on external assessment.

With regard to possible sampling variations, the ratio of school average of raw SBA scores to sample average of raw SBA scores was examined for each school. The distribution of these ratios of 523 schools is shown below.

Figure 1: Distribution of ratios of school means of raw SBA scores to sample means of raw SBA scores




The 5% percentile of the distribution was 0.94 and the 95% percentile was 1.06. It implied that sample raw means were very close to school raw means for most schools. In addition, it should be noted that the mean mark of sampled students' work from external assessment of a school would be adjusted upwards when sample raw mean was less than school raw mean; and vice versa. With such adjustments, it was expected that the sampling variations would be further reduced.

To further enhance the reliability of the estimations of means and spreads of SBA scores of schools based on external assessment, Bayesian hierarchical modeling was employed so as to share information across different schools. The model is briefly described below.

Let $Y_i$ (a vector) be the marks based on external assessment of a school i; i.e., $Y_{i,1}$, $Y_{i,2}$,$Y_{i,3}$,...,$Y_{i,ni}$. The number of students in the school is ni. The Bayesian hierarchical model is set up as follows:

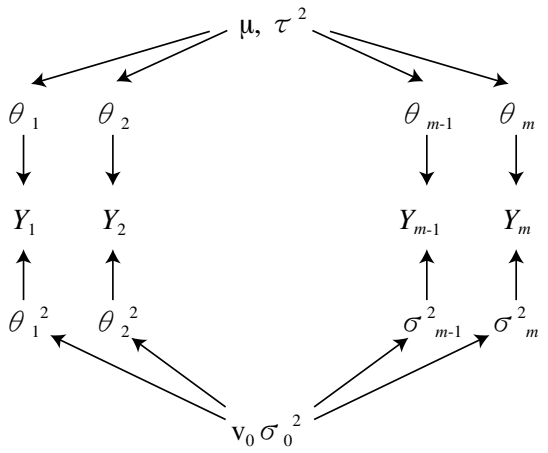
$Y_{i,1}, Y_{i,2}, Y_{i,3},..., Y_{i,ni} \sim \text{Normal}(\theta_i, \sigma_i^2)$
for i = 1,…,m (i.e., there are m schools)

$\theta_i \sim \text{Normal}(\mu, \tau^2)$
for i = 1,…,m (i.e., all $\theta_i$ are sampled from a super-population)

$1/\sigma_i^2 \sim \text{Gamma}(v_0/2, v_0\sigma_0^2/2)$
for i = 1,…,m (i.e., all $\sigma_i^2$ are sampled from a super-population)

The model is graphically displayed in the figure below.

Figure 2: The structure of Bayesian hierarchical modeling showing relationship between data observed and parameters involved




In Bayesian analysis, the parameters: μ, $\tau^2$, $v_0$, and $\sigma_0^2$ are treated as random variables. To conduct the Bayesian estimation, some non-informative priors p(μ), p($\tau^2$), p($v_0$), p($\sigma_0^2$) are set up respectively for μ, $\tau^2$, $v_0$, and $\sigma_0^2$. Based on such a model, information could be shared across schools when estimating $\theta_i$ and $\sigma_i^2$. For schools with small sample sizes and/or extreme empirical values, the estimates of $\theta_i$ and $\sigma_i^2$ will be pulled towards the corresponding overall estimates (μ and $\sigma_0^2$). In general, algorithms using Markov Chain Monte Carlo (MCMC) method are deployed for estimation in Bayesian hierarchical modeling. It is well known that such a hierarchical model could reduce the estimation error (Berger, 1993; Hoff, 2010; Gelman et. al., 2003) in different applications. In addition, a simulation study has been undertaken to gauge the magnitude

of gain in accuracy when applying the model in the specific setting for SBA moderation (Fung, 2011). It is found that the total Mean Squared Error (MSE) in the estimation of school means could be reduced by some 30% using Bayesian hierarchical modeling, as compared with the one simply using sample means.

After consolidating the sample review result of a school, it was compared with the corresponding result from statistical moderation. Due to possible variations incurred in the sampling and remarking process, an appropriate tolerance limit was set when comparing the two results. If the difference was within the tolerance limit, the statistical moderation result would be adopted as the school performance level on SBA. If the difference exceeded the tolerance limit, appropriate adjustments would be made to the statistical moderation result with reference to the sample review result in order to determine the school performance level on SBA.

It is worth mentioning that in LS, the SBA marks of a student is divided into two parts, namely: (i) Task and (ii) Process. Only marks on the Task of a student will be moderated according to the procedures mentioned above. Marks on Process which includes students' effort in the IES will not be subject to moderation, as students' performance in this part may not be prominently associated with the examination results. Schools are expected to award the Process marks in accordance with the stipulated criteria. The Authority imposes quality control measures to ensure the fairness and reliability of the assessment on Process, which include monitoring by District Coordinators (DCs), providing feedback to schools and follow-up of any irregularities identified.

In 2012, it is observed that the mean of Process marks submitted by all schools is quite appropriate (i.e., not too high or too low) and the spread is reasonable. The moderated Task marks are then combined with the un-moderated Process marks to form the total SBA score for inclusion in the subject result. For the Task component, in 2012 53.3% of schools fall into the "within the expected range" category[2], while the marks of 21.5% of schools are higher than expected, and 25.1% lower than expected. Moreover, among the schools with marks higher or lower than expected, the majority only deviate slightly from the expected[3]. Thus, in 2012 the majority of schools falls into the "within the expected range" or "slightly higher/lower than expected" categories. It is supposed that teachers in these schools do have a good understanding about the marking standards.

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2 Based on the difference between the means of the moderated and raw Task marks (D), a school is in the category of "within the expected range" when $0 \leq D < 3$ with full mark = 50.

3 The difference between the means of the moderated and raw Task marks is greater than or equal to 3 and less than 6 with full mark = 50.

# 5. Grading process based on professional expertise

Under SRR, a set of draft descriptors has been developed for each subject to describe how a candidate typically performs at a given level. The main purpose of grading is to determine the minimum score needed for a candidate to attain a given level. This minimum score is known as the cut score.

The HKDSE grading procedures include a series of tasks (HKEAA, 2011b) that begins before the actual marking of scripts. For any given subject, a panel of expert judges, which comprises the subject manager(s), the chief examiner(s) and selected assistant examiner(s) or markers from the individual components, is responsible for conducting the series of grading tasks, including: (i) sample script selection, (ii) marking standardization, (iii) post-marking exercise, and (iv) panel of judges grading meeting.

After the 2012 public examination of LS, some samples that could illustrate performance particularly well in relation to the level descriptors were selected. After script selection, the panel discussed the scores to be awarded to discrete points in the sample scripts. These marked scripts were used as standardisation scripts for marking.

After the completion of marking and moderation of SBA scores, the panel considered the selected written examination exemplars and SBA samples with reference to the level descriptors, and the previous released samples. The objective of the discussion was to make provisional grading recommendations (including preliminary cut score ranges) on each examination paper and SBA component through expert judgment based on samples of performance.

In the panel judges grading meeting, panel members re-considered the level descriptors, question requirements, marking guidelines and a number of representative samples as well as a range of recommended cut scores for each level. Panel judges exchanged their views led by the Chief Examiner. With a number of rounds of discussions, they finally agreed on preliminary cut scores for each paper and SBA component, and for the subject. In determining the cut scores, consideration was made to the actual performance of candidates in relation to

- the level descriptors;
- performance samples from the HKDSE SRR Information Packages (HKEAA, 2009);
- marked live scripts selected;
- feedback from markers on the level of difficulty of each particular examination paper;
- performance statistics of current papers and SBA component.

During this meeting, the panel of judges investigated the impact of amending the cut scores for each examination paper on subject grade distributions. Finally, the panel of judges decided on their recommendations for the cut scores for LS.

A senior management team led by the Secretary General of the Authority reviewed and decided on the cut scores based on the recommendations made by the panel of LS, and submitted the cut scores from the panel of LS to the Public Examinations Board (PEB) for further discussion and endorsement. In 2012, after discussion in PEB it was endorsed that the recommendations made by the panel of LS were strictly followed without any adjustments. The cut scores for Level 5** and Level 5* were set with reference to the percentage in mark distribution so that Level 5** was awarded to the highest-achieving 10% (approximately) of Level 5 candidates and Level 5* was awarded to the next highest-achieving 30% (approximately) of Level 5 candidates.

# 6. Conclusions

In this paper[4], it is highlighted that the Authority has taken stringent measures to ensure the quality of marking and grading procedures adopted in HKDSE Examination of LS. Relevant researches were conducted to examine the impacts of the new measures as far as possible. It is expected that after having an overall picture of the marking and grading procedures, the public will have more confidence in the attainment levels conferred by the Authority.

Currently, the Authority is now collecting opinions and feedback from various stakeholders on the assessment framework of LS in order to strive for further improvement in the future.

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# 2012 年香港中學文憑通識教育科考試的閱卷與評級程序

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*香港考試及評核局*

**摘要**

2012 年香港中學文憑考試的考生必須修讀通識教育科。香港中學文憑考試採用水平參照模式匯報考生的表現，將考生表現分為各等級（1 至 5）。部份通識科教師對通識科考試評級結果表示疑慮。有見及此，本文回顧通識科考試的閱卷與評級程序，期望當大眾認識相關的程序後，將對考評局所發的資歷更具信心。

**關鍵字**

香港中學文憑考試，通識教育科，水平參照模式匯報，閱卷與評級

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# *Perspectives of school-based assessment in the NSS curriculum through the eyes of the administrative and teaching stakeholders in Hong Kong*

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## Abstract

School-based assessment (SBA) is a form of formative assessment involving feedbacks and appraisals to students based on their school-based projects; it enables students to identify and improve on their areas of weakness and teachers to adjust their teaching strategies accordingly (Organisation for Economic Co-operation and Development [OECD], 2005). SBA is still a relatively new concept for most senior secondary school subjects in Hong Kong – yet it is now heavily incorporated into Hong Kong's New Senior Secondary (NSS) Curriculum since the introduction of the New Academic Structure (NAS) in 2009. SBA has spawned numerous debates on its efficacy in Hong Kong and worldwide. This study gives an overview of the current issues related to SBA in Hong Kong through the eyes of the administrative and teaching stakeholders by utilizing territory-wide data of 91 secondary schools in Hong Kong from the most recent NSS Curriculum Study conducted in 2011-12.

## Keywords

school-based assessment (SBA), formative assessment, New Senior Secondary (NSS) curriculum, curriculum reform, Hong Kong education

# 1. Introduction

## 1.1 The current Hong Kong education system and school-based assessment

In light of the rising competitiveness of the global environment, the Hong Kong's education sector recognizes its need to strengthen Hong Kong students' adaptability, creativity, independent thinking and life-long learning capabilities, which were limited by the traditional education system that restrained students from maximizing their potential. As a result, the New Academic Structure (NAS) was introduced in 2009 as one of the most ambitious education reforms in Hong Kong's education history.

The NAS reduced the number of secondary school years from 7 to 6, and increased the number of tertiary education years from 3 to 4: Hong Kong students are now required to study three years in junior secondary school, three years in senior secondary school, and four years in the tertiary education sector – a "3-3-4" education system. Under this configuration, the New Senior Secondary (NSS) Curriculum was implemented as the framework for governing the content of the senior secondary school years (Secondary 4 to 6). As opposed to the traditional senior secondary school curriculum, NSS involved a number of major changes, which consisted of designating Liberal Studies as one of the four core subjects, the introduction of the elective subject system, as well as an emphasis on Other Learning Experiences (OLE) – to name but a few.

Major changes have also taken place in the assessment environment for senior secondary school students: the current education system has now shifted from a two-fold public examination system – the Hong Kong Certificate of Education Examination (HKCEE) and Advanced Levels (AL) in Secondary 5 and Secondary 7 respectively to a single public examination, the Hong Kong Diploma of Secondary Education (HKDSE) in Secondary 6. Meanwhile, as both an assessment and reviewing tool for teachers and students, school-based assessment (SBA) was incorporated and is now playing a pivotal role in giving greater emphasis to formative assessment (as opposed to summative assessment) in the NSS Curriculum. Notwithstanding its great potential in realizing the aims and virtues of the NAS, SBA poses great challenges and complexities in its application. In this paper, the progress of the implementation of SBA in the Hong Kong context will be reviewed and discussed through the eyes of administrators and teaching stakeholders.

## 1.2 The implementation of SBA in the NSS curriculum

In Hong Kong, SBA is an assessment administered in schools as part of the learning and teaching process, with senior secondary students being assessed by their subject teachers (Hong Kong Examinations and Assessment Authority [HKEAA], 2012a). In total, it accounts for 20% of the students' overall HKDSE Examination result. From 2012, SBA was incorporated in 12 subjects including Chinese Language, English Language, Liberal

Studies, Chinese History, History, Biology, Chemistry, Physics, Science, Information & Communication Technology, Design & Applied Technology, and Visual Arts. According to the Hong Kong Examinations and Assessment Authority (HKEAA) (2013b), SBA will be extended gradually to other subjects starting from the 2014 HKDSE Examination, as indicated in Table 1 below:

Table 1: Implementation Timetable (HKEAA, 2013b)

| **Year of Exam** | **Subjects** | | |
|---|---|---|---|
| | - Chinese Language<br>- English Language<br>- Liberal Studies<br>- Chinese History<br>- Design & Applied Technology<br>- History<br>- Information & Communication Technology<br>- Visual Arts | - Biology<br>- Chemistry<br>- Physics<br>- Science | - Chinese Literature<br>- Economics<br>- Ethics & Religious Studies<br>- Geography<br>- Health Management & Social Care<br>- Technology & Living<br>- Tourism & Hospitality Studies<br>- Literature in English<br>- Music |
| **2012** | Implementation | Partial implementation (laboratory work) | Defer implementation |
| **2013** | Implementation | Partial implementation (laboratory work) | Defer implementation |
| **2014** | Implementation | Implementation | Defer implementation |
| **2015** | Implementation | Implementation | Defer implementation |
| **2016** | Implementation | Implementation | Defer implementation |
| **2017** | Implementation | Implementation | Defer implementation |
| **2018** | Implementation | Implementation | Optional trial |
| **2019** | Implementation | Implementation | Implementation |

The intention of HKEAA is to slowly incorporate SBA in most subjects (not implemented in Mathematics and Business, Accounting & Financial Studies while practical examination is implemented for Physical Education instead), in a progressive and gradual manner year on year, while reviews, research and public consultations are simultaneously ongoing as adjustments are expected during the implementation process. Due to the demanding nature of SBA (as explained in the previous section), HKEAA has responded with a list of streamlining measures in order to alleviate the current situation and to provide room for the future implementation of SBA in other subjects. These streamlining measures are as follows:

*1) The SBA of Chinese Language and Liberal Studies will be "streamlined" (i.e. the reduction of the number of tasks, assessments and mark submissions in the SBA of subjects) in the 2013 HKDSE Examination;*
*2) For the 9 deferred subjects where SBA was originally scheduled to be implemented between 2014 and 2016, full implementation will be postponed to the 2019 HKDSE Examination, with optional school trials to be conducted in 2018.*

(HKEAA, 2013b)

To better understand the needs of the education sector, HKEAA, the Curriculum Development Council (CDC) and the Education Bureau (EDB) are working in close collaboration to gauge the views of schools, curriculum development and subject experts, as well as independent education institutions in the streamlining proposals since October 2011. These proposals include streamlining the SBA of the 9 subjects that are scheduled in the 2014 HKDSE Examination, advancing SBA streamlining in Chinese Language to the 2013 cohort and adopting interim measures for Liberal Studies, and postponing the implementation of SBA of the 9 deferred subjects to the 2019 HKDSE Examination (HKEAA, 2013b).

**1.3 Why school-based assessment?**

SBA is by no means a new assessment tool; it is widely accepted and comprehensively implemented in countries such as Australia, New Zealand, England, Scotland, Canada and South Africa. SBA is regarded as a tool to more accurately reveal the true ability of the student, reduce the limiting effects of "exam fright", and to increase the confidence of students as they have already learnt and brought to practice the examination contents and skills during the conduct of their SBA projects. In addition to this, students can also feel less anxious as they have already achieved a certain percentage of the final mark prior to their final exam (Kerr-Phillips, 2007). SBA is similarly viewed in Hong Kong as an integral component of teaching and learning, which made feedback and comprehensive appraisals possible, thus allowing both teachers and students to identify the latter's strengths and weaknesses for the purpose of continual improvements and confidence building (HKEAA, 2012b). In addition, SBA is also proven to have positive effects on students' public oral examination and better absentee rate than students from schools that do not submit SBA marks (Lee, 2009).

Yet SBA is not without its problems and controversies. As indicated by a report published by the Hong Kong Professional Teachers' Union (PTU) in 2013, workload brought upon by SBA is overwhelming for both teachers and students. For the student, the demand for SBA is high in terms of its quality and quantity, sometimes exceeding that of a student's ability (may even include tertiary education level contents). In addition, the heavy workload derived from SBA often incur extra lesson time, therefore limits students

from partaking in extracurricular activities. On the other hand, teachers are similarly affected by hosting the extra lessons, and marking the vast amount of students' SBA work. Furthermore, the PTU report suggested that the inadequate proportion of SBA that makes up the final mark will ultimately be "unfairly" adjusted by the public paper examination, regardless of how well the student did in the former. In light of the above, some teachers have even suggested that SBA may negatively affect the quality of learning and teaching as a whole in Hong Kong (Hong Kong Professional Teachers' Union, 2013).

Echoing these negative views, the sheer amount of workload of SBA has led to another major issue in other countries – plagiarism; it is tempting for students to copy work off the internet in order to save time amidst a tight schedule and demanding workload, thus incurring further workload for teachers in cross-checking references. Not only are the students tempted to play outside the rules, teachers are also reported to have meddled with the grey areas of the SBA grading system in order to achieve better grades for their students. Even without the deliberate intention of providing lenient markings, teachers call for a more standardized grading system for SBA across subjects in view of the "appalling partiality" in this aspect (Kerr-Philips, 2007). On an extreme note, Michael Gove, the Minister of Education in England remarked at the London Festival of Education in 2012, when questioned on the efficacy of SBA, "if education can't be externally assessed, it's play", thus his recent initiatives to downplay the role of SBA enhance summative assessments in the UK (Downs, 2012).

In spite of the downside of SBA, it is still, no doubt, a tool to diversify the traditionally summative assessment tools (i.e. public paper examinations); it gives formative assessment a larger role for achieving continuous reviews on teaching practices, and sustainable improvement on the holistic learning and teaching environment. This paper will seek to provide an insight to the voices of the administrative and teaching stakeholders in order to provide an overview of the extent of success and acceptance of the implementation of SBA in Hong Kong's NSS Curriculum.

# 2. Background of the study

In 2011, the EDB of Hong Kong Special Administration Region commissioned the Centre for Enhancing English Learning and Teaching (CEELT) of the Faculty of Education of The Chinese University of Hong Kong to undertake a major research project entitled New Senior Secondary Curriculum Implementation Study 2011 to reveal the progress made from implementing NSS. The study aimed at investigating various aspects of the NSS in 6 major themes, namely "Curriculum Planning", "Learning and Teaching", "Assessment", "Managing Change", "the Impact on Senior Secondary School Students", and "Ongoing Needs and Concerns". This paper will report on the findings related to SBA, a major theme under "Assessment".

# 3. Methodology

The NSS study selected 105 schools out of a pool of 447 secondary schools in Hong Kong by a stratified random sampling technique based on an objective indicator of student achievement (Group 1 are schools with the highest average student achievement, Group 2 the next highest and Group 3 is the lowest). In the end, 91 out of the 105 schools responded to the request to participate in the survey, thus spawning a high response rate of about 87%.

The questionnaires were developed to gauge the views of the implementation of NSS from 6 different stakeholders; including School heads or deputy heads (SH), Key Learning Area coordinators and subject panel heads (KH), Secondary 6, 4 and 3 teachers (T6, T4 and T3), as well as Secondary 6, 4 and 3 students (S6, S4 and S3). The questionnaires were sent to the 91 schools and were administered by the schools' personnel. The completed questionnaires were then returned by post between December 2011 and February 2012. The distribution of the returned questionnaires among the stakeholders is listed in Table 2 below:

Table 2: Number of questionnaires returned from different stakeholders

| Stakeholders | Sampling | Number of questionnaires |
|---|---|---|
| SH | The school heads or deputy heads | 86 |
| KH | All Key Learning Area coordinators and subject panel heads | 515 |
| T6 | Teachers teaching Secondary 6** | 838 |
| T4 | Teachers teaching Secondary 4** | 527 |
| T3 | At least 8 teachers teaching Secondary 3 (one per KLA) | 378 |
| S6 | All Secondary 6 students | 4,614 |
| S4 | All Secondary 4 students | 5,888 |
| S3 | At least two classes of Secondary 3 students from each school | 2,751 |

* For subjects comprising a compulsory part and elective modules, teachers who teach only elective modules are not required to complete the questionnaire.

** Some of the teachers placed themselves as T4 and T6, thus the data were counted for both stakeholders.

SBA was a major theme under "Assessment" and since this paper seeks to identify the extent of how well SBA is incorporated into the administrative and teaching processes of the NSS Curriculum, this paper has drawn data only from the administrative and teaching stakeholders' (SH, KH, T6, T4 and T3) views on SBA therein. The contents of the questions on SBA were similar but tailored to each stakeholder ***(Appendix)***.The questions on SBA were grouped into 4 major components designed to answer the research questions presented in the following table:

Table 3: SBA components and research questions

| **SBA research questions:** *To what extent…* | **SBA component** | **Views derived from:** |
|---|---|---|
| 1) Has SBA been successfully incorporated into the schools? (understanding and knowledge, scheduling and formulating support measures) | 1) The implementation of SBA in schools | SH, KH, T6 and T4 |
| 2) Has the grading of SBA been subjected to fairness and consistency, and the criteria be transparent to students? | 2) The grading of SBA | T6, T4 and T3 |
| 3) How confident were the teachers in implementing SBA? | 3) The confidence of teachers in implementing SBA | T6, T4 and T3 |
| 4) How useful has SBA been as a tool in generating useful feedback for the continual improvement of students' learning? | 4) The effectiveness of SBA | T6, T4 and T3 |

The results and analysis section will be presented by bar charts in order to aid readers in visualizing the obtained data that are attached in the annexes of this study.

# 4. Results and analysis

The incorporation of SBA into the senior high school curriculum is a relatively new one for most subjects and requires understanding and adaptability on the part of the schools and teachers in this period of transition. The procedures adopted by schools to ensure an effective implementation of SBA, knowledge transfer of SBA (i.e. from school to teachers and from teachers to students) and the support provided to the teachers by the schools are inextricable factors determining the success of the implementation of SBA in the NSS Curriculum. In this light, this section will look at the perception of the administrative and teaching stakeholders – SH, KH, T6 and T4 – to gauge the extent of assimilation of SBA into the NSS Curriculum in terms of the above aspects.

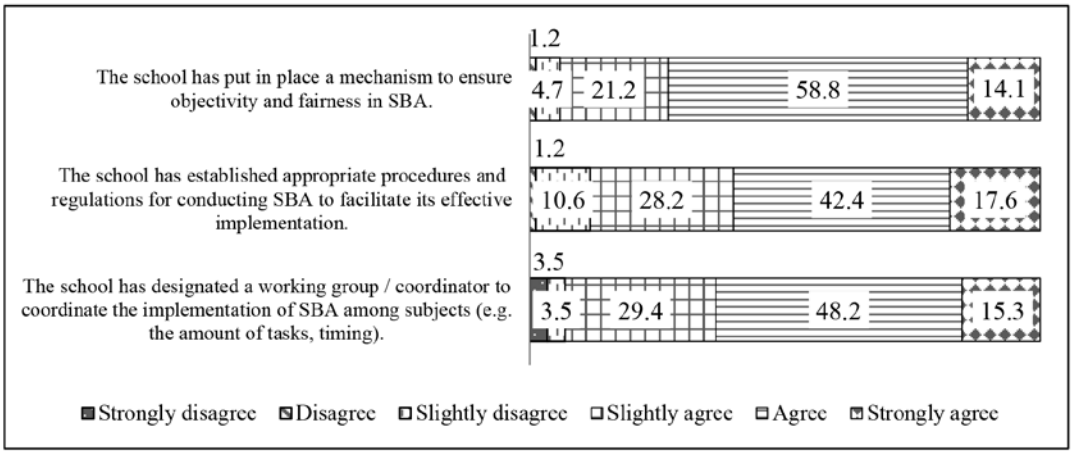
A 6-point Likert scale was used to gauge the attitudes of stakeholders running from "strongly disagree" to "strongly agree". The latter 3 points were used to calculate positive responses i.e. "slightly agree", "agree", "strongly agree". Since the implementation of SBA is a new feature in the NAS, any positive responses are deemed significant, thus "slightly agree" is incorporated in the reporting of positive results.

### 4.1 Procedures adopted by schools to ensure effective implementation of SBA

According to Figure 1 below, SH have responded with very high agreement levels

in items (in descending order): “The school has put in place a mechanism to ensure objectivity and fairness in SBA” (SH: 94.1%), “The school has designated a working group / coordinator to coordinate the implementation of SBA among subjects (e.g. the amount of tasks, timing)” (SH: 92.9%), “The school has established appropriate procedures and regulations for conducting SBA to facilitate its effective implementation” (SH: 88.2%).

Figure 1: Procedures to ensure effective implementation of SBA by SH




While the majority of the schools have implemented procedures and regulations for the effective implementation of SBA on a wider scale, they have also demonstrated micro management planning by assigning working groups and coordinators to manage smaller items among subjects.

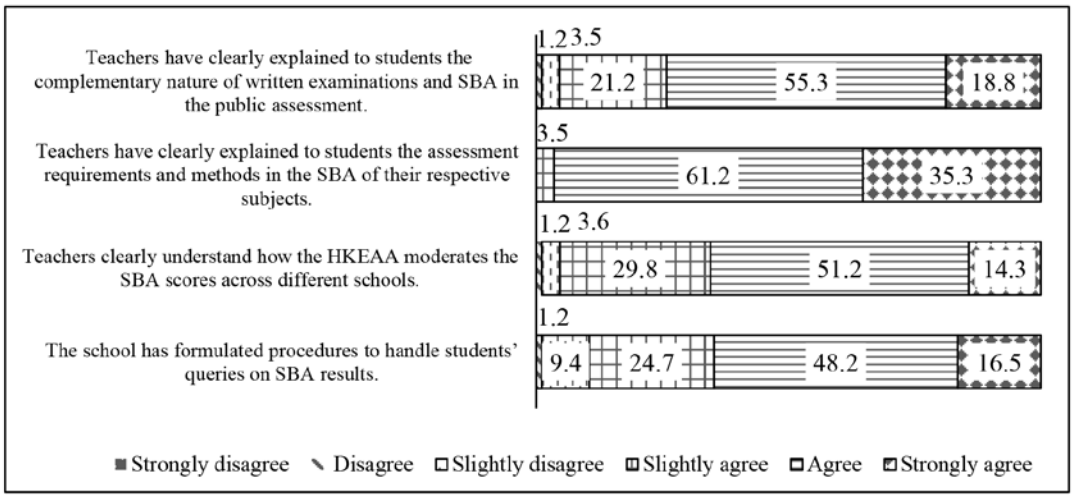
### 4.2 SBA knowledge transfer

The implementation of SBA can never be successful without the proper guidance provided to the teachers by HKEAA and their respective schools. Thus HKEAA has pledged to provide detailed guidelines, assessment criteria and exemplars to schools and teachers to ensure consistency in SBA grading, and as well as the provision of professional training and district coordinators to support schools and teachers to successfully implement SBA in the NSS curriculum (HKEAA, 2013a). In light of this, the acquiring and transferring of SBA information among stakeholders (i.e. from schools to teachers and from teachers to students) will be looked at. In this section, “SBA knowledge transfer” refers to both the acquiring and transferring of SBA information (e.g. assessment criteria, SBA weighting, number of SBA tasks, etc.) among stakeholders.

According to the responses from SH, shown in Figure 2 below, the findings provided positive evidence of the schools having enabled the knowledge transfer of SBA information to other stakeholders in secondary schools. High agreement levels were

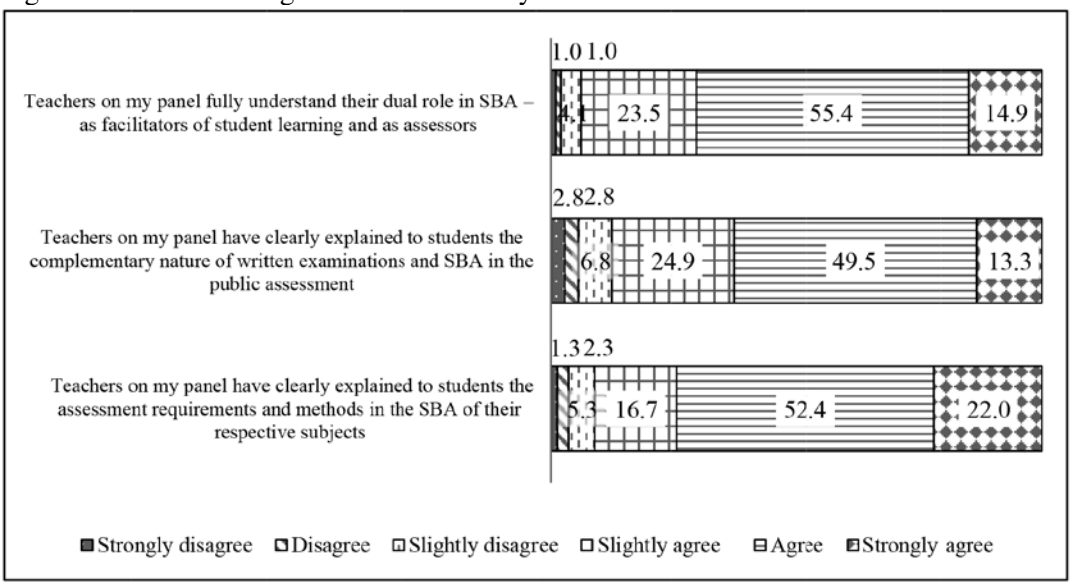
found in the items (in descending order): "Teachers have clearly explained to students the assessment requirements and methods in the SBA of their respective subjects" (SH: 100.0%) was rated highest, followed by "Teachers have clearly explained to students the complementary nature of written examinations and SBA in the public assessment" (SH: 95.3%), "Teachers clearly understand how the HKEAA moderates the SBA scores across different schools" (SH: 95.3%), and "The school has formulated procedures to handle students' queries on SBA results" (SH: 89.4%).

Figure 2: SBA knowledge transfer viewed by SH



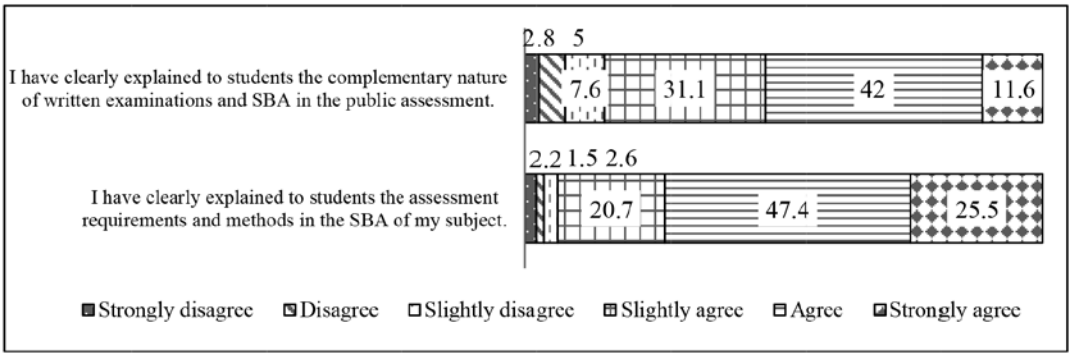

Similarly, KH have responded with highly positive feedback on the transfer of SBA knowledge among teachers and students. In descending order: "Teachers on my panel fully understand their dual role in SBA – as facilitators of student learning and as assessors" (KH: 93.8%) was rated highest, followed by "Teachers on my panel have clearly explained to students the assessment requirements and methods in the SBA of their respective subjects" (KH: 91.1%), and "Teachers on my panel have clearly explained to students the complementary nature of written examinations and SBA in the public assessment" (KH: 87.7%), as indicated in Figure 3 below:

Figure 3: SBA knowledge transfer viewed by KH




By the same token, T6 responded with highly positive feedback in the following items, in descending order "I have clearly explained to students the assessment requirements and methods in the SBA of my subject" (T6: 93.6%), and "I have clearly explained to students the complementary nature of written examinations and SBA in the public assessment" (T6: 84.7%), as indicated in Figure 4 below:

Figure 4: SBA knowledge transfer viewed by T6



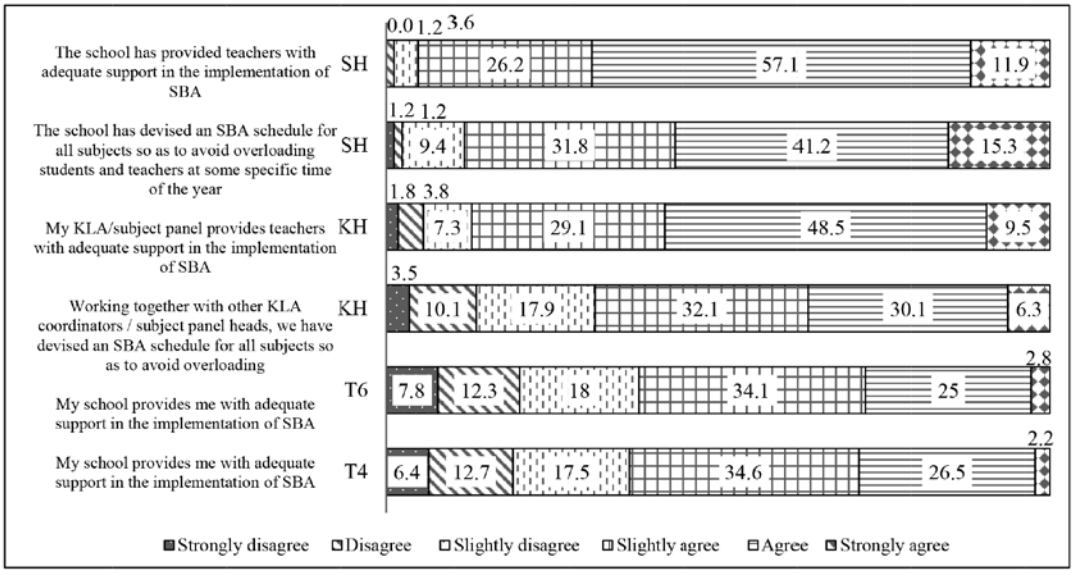

According to SH as well as KH, their teachers have demonstrated a clear knowledge in understanding the contents of SBA (e.g. how HKEAA would moderate SBA scores across different schools) and have taken up a dual role as both a facilitator and an assessor. With such knowledge, teachers were able to help students in resolving their queries on SBA-related matters, guide them through the assessment requirements and methods in their respective SBA subjects, and explain to them the complementary nature of written

examinations and SBA in the public assessment. T6 on the other hand, have provided the same positive findings at the teaching level.

### 4.3 SBA support provided to teachers

This section looks at the perceived support implemented and received by the administrative and teaching stakeholders in regard to the implementation of SBA. According to Figure 5 below, SH felt that "the school provides teachers with adequate support in the implementation of SBA" (SH: 95.2%) and that "the school has devised an SBA schedule for all subjects so as to avoid overloading students and teachers at some specific time of the year" (SH: 88.3%). Meanwhile, KH have responded with similar high levels of agreement to item "My KLA/subject panel provides teachers with adequate support in the implementation of SBA" (KH: 87.1%), but relatively lower in "Working together with other KLA coordinators / subject panel heads, we have devised an SBA schedule for all subjects so as to avoid overloading students and teachers at some specific time of the year" (KH: 68.5%). On the other hand, although more than half of T6 and T4 have responded with positive feedback to item "My school provides me with adequate support in the implementation of SBA" (T6: 61.9%, T4: 63.3%), a significant 40% have responded otherwise.

Figure 5: SBA support viewed by SH, KH, T6 and T4




It is noteworthy to highlight the significant differences on the level of perceived school support provided for the teachers among SH and the teaching stakeholders (T6 and T4) – although SH may feel that they have provided enough, the frontline teachers may still feel more support is needed as the workload from SBA is high. The findings reveal

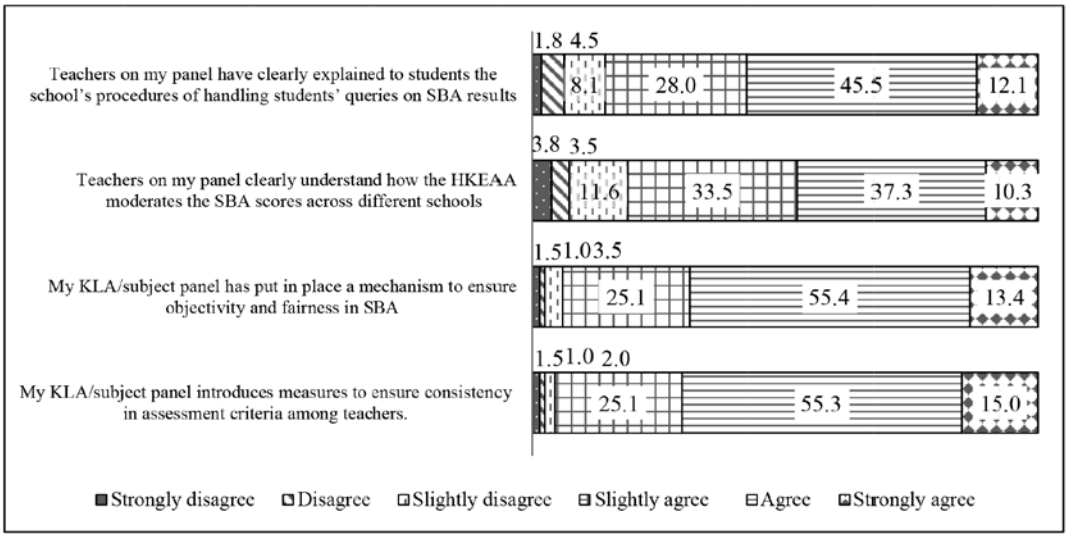
that KH should also collaborate more with KH from other subjects so as to devise SBA schedules in avoiding the overloading of work.

### 4.4 The grading of SBA

In light of the autonomy given to teachers in grading their students' SBA works, standardization is a crucial factor in determining fairness and minimizing discrepancies in students' marks among both teachers and between schools, thus allowing a more accurate and better reflection on the quality of the students' works accordingly. The information on the marking requirements of SBA works is essential to students, therefore such knowledge must be readily transferable and transparent. This section will look at the extent to which KH have ensured fairness in SBA grading at their schools and whether they and T6 have made SBA knowledge transferable to students.

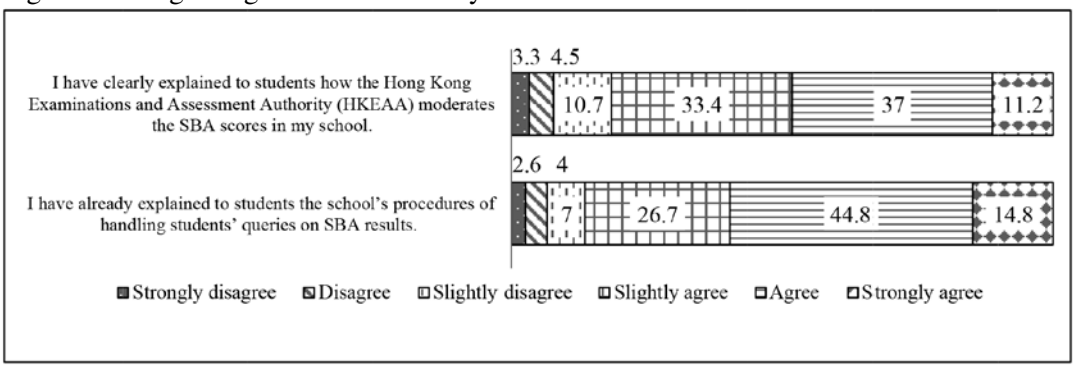
The findings revealed that the vast majority of Key Learning Area coordinators and subject panel heads (KH) have taken into consideration and have ensured that there is reliability and fairness in SBA results. They adopted different measures as follows (in descending order): "My KLA/subject panel introduces measures to ensure consistency in assessment criteria among teachers" (KH: 95.4%), "My KLA/subject panel has put in place a mechanism to ensure objectivity and fairness in SBA" (KH: 93.9%), "Teachers on my panel have clearly explained to students the school's procedures of handling students' queries on SBA results" (KH: 85.6%), and "Teachers on my panel clearly understand how the HKEAA moderates the SBA scores across different schools" (KH: 81.1%), Figure 6 below:

Figure 6: The grading of SBA viewed by KH



On the other hand, T6 have revealed their efforts in handling SBA queries (in descending order): "I have already explained to students the school's procedures of handling students' queries on SBA results" (T6: 86.3%) and "I have clearly explained to students how the HKEAA moderates the SBA scores in my school" (T6: 81.6%), as indicated in Figure 7 below:

Figure 7: The grading of SBA viewed by T6




It is a discernible fact that the grading of SBA is viewed by both KH and T6 to have been ensured in its fairness; mechanisms were in place to ensure objectivity and consistency in assessment criteria among teachers. Meanwhile, schools' procedures of handling students' queries on SBA results have been clearly explained to the students, suggesting that students were provided with and were knowledgeable about obtaining information on their SBA results. Furthermore, it is noteworthy to mention that the majority of KH perceived their teachers to have understood how HKEAA would moderate SBA scores across different schools, and that the majority of T6 have made the marking criteria available to their students at their respective schools.

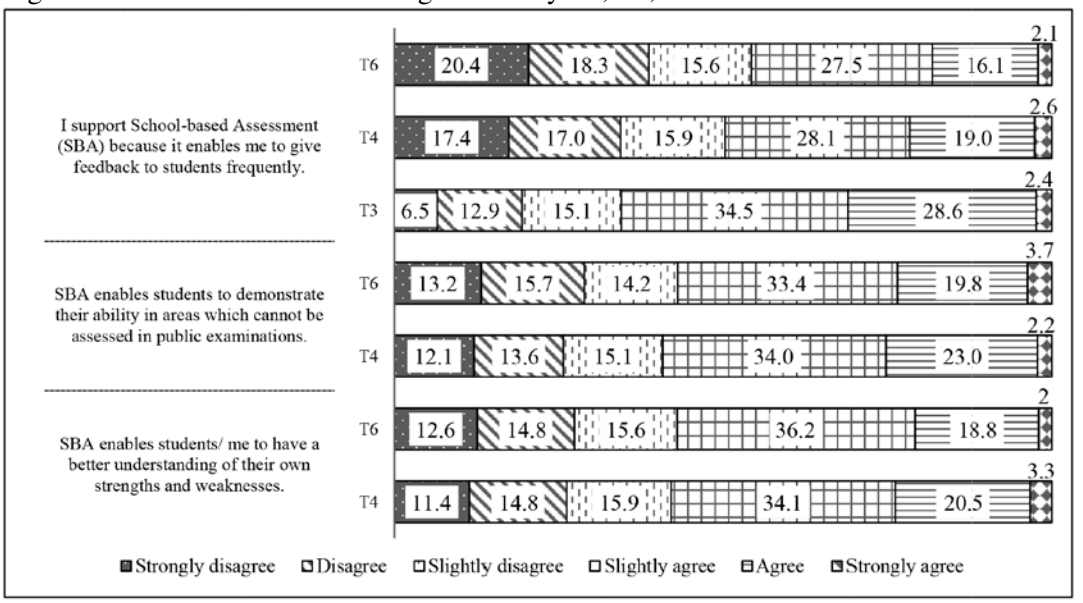
### 4.5 The effectiveness of SBA

One of the intended functions of SBA is to enable teachers to provide feedback and comprehensive appraisals to students, thus allowing students to understand and improve on their areas of weakness. In addition to this, SBA can allow students to demonstrate their strengths - that are often neglected in traditional public examinations (e.g. presentation skills). This section looks at the extent to which feedback and the demonstration of students' alternative skills are enabled by the implementation of SBA in the NSS Curriculum.

As indicated by Figure 8 below, only around 50%-65% of stakeholders (T6, T4 and T3) agreed about the perceived benefits of SBA: "SBA enables students / me to have a better understanding of their own strengths and weaknesses" (*T6: 57.0%, T4: 57.9%), "SBA enables students to demonstrate their ability in areas which cannot be assessed in public examinations" (*T6: 56.9%, T4: 59.2%), and "I support School-based Assessment

(SBA) because it enables me to give feedback to students frequently" (*T6: 45.7%, T4: 49.7%, T3: 65.5%).

Figure 8: SBA feedback for learning viewed by T6, T4, and T3




The opinions of the teachers varied in the use of SBA as a feedback tool for students – while about 65% of T3 felt that SBA enabled them to provide useful feedback for students on a frequent basis, half of T4 and more than half of T6 felt otherwise. The use of SBA in enabling students in better understanding their own strengths and weaknesses and as a means to demonstrate their ability in areas not assessed in public examinations were rated relatively more positively by T6 and T4, despite a significant portion (about 40%) of them feeling that SBA could not do so.

Although a significant portion of teachers were able to improve the learning and teaching environment by effectively implementing SBA, the results revealed that there are factors hindering some teachers from doing so. As a preliminary observation, these factors may include the overburdening of workload derived from SBA that prevented teachers from having the needed time to provide feedback for their students.

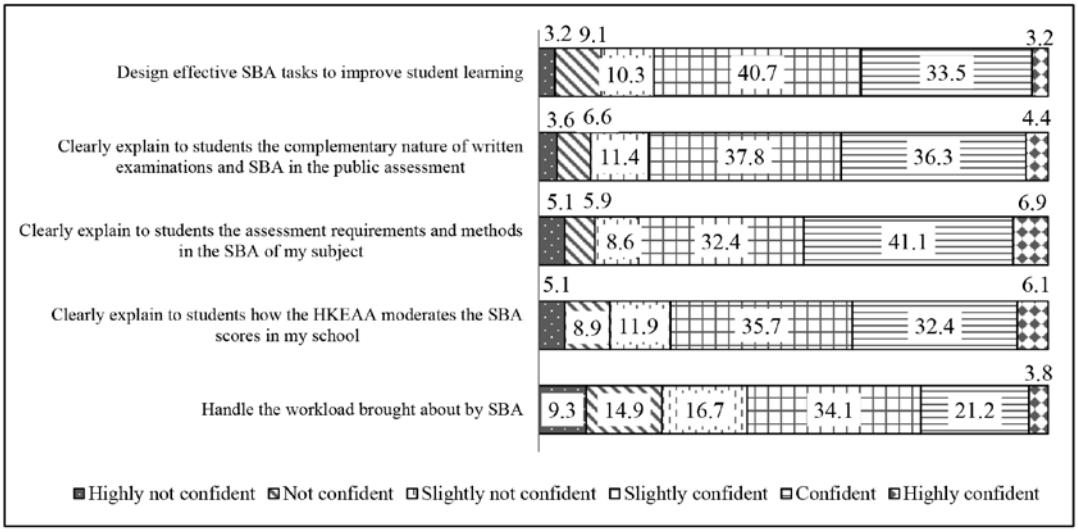
### 4.6 The confidence of teachers teaching Secondary 4 and the extent of success in implementing SBA by teachers teaching Secondary 6

Teachers' confidence in implementing SBA can reveal their knowledge and understanding of SBA in bringing it to fruition; likewise, the lack in such confidence may also suggest their concerns in the implementation process. The scales of T4 (confidence scale) and T6 (agreement scale) are different due to their respective nature - of the lack of

experience in implementing SBA for T4, as opposed to the experienced T6.

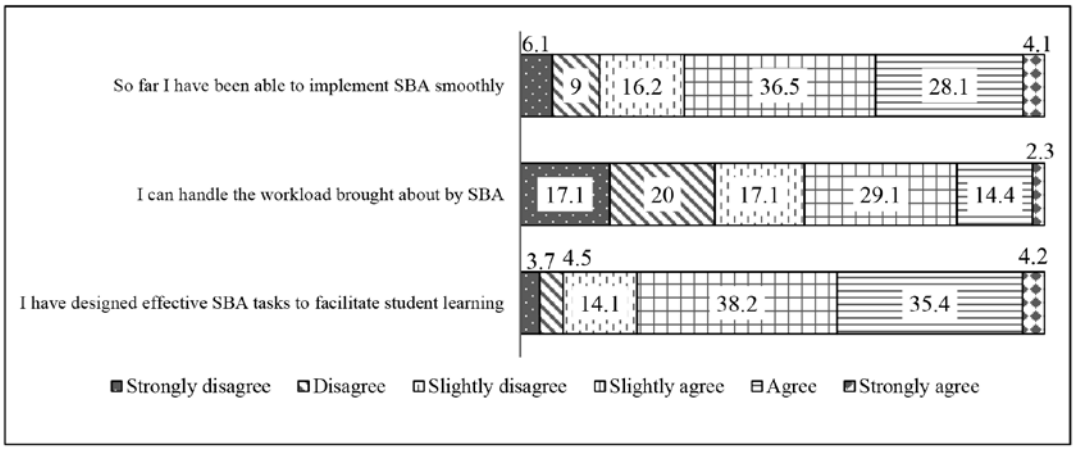
The findings suggested that the majority of T4 were comfortable in implementing SBA related tasks, as revealed by the high ratings in the following items (in descending order): "clearly explain to students the assessment requirements and methods in the SBA of my subject" (T4: 80.4%), "clearly explain to students the complementary nature of written examinations and SBA in the public assessment" (T4: 78.5%), "design effective SBA tasks to improve student learning" (T4: 77.4%), and "clearly explain to students how the HKEAA moderates the SBA scores in my school" (T4: 74.2%). It is noted that the item "handle the workload brought about by SBA" (T4: 59.1%) was rated relatively lower than the above, indicating that about 40% of T4 were not confident with their handling of workload derived from SBA, as indicated in Figure 9 below:

Figure 9: Teachers' confidence in SBA implementation viewed by T4




Meanwhile, the majority of T6 agreed to the items (in descending order): "I have designed effective SBA tasks to facilitate student learning" (T6: 77.8%), and "So far I have been able to implement SBA smoothly" (T6: 68.7%). However, less than 50% of T6 agreed with the item "I can handle the workload brought about by SBA" (T6: 45.8%), suggesting they are facing difficulties in handling workload derived from SBA, as indicated in Figure 10 below:

Figure 10: Teachers' confidence in SBA implementation viewed by T6




This section has suggested that the majority of T4 have confidence in designing effective SBA tasks to facilitate student learning, were able to implement SBA smoothly, and have clearly explained to students the contemporary nature of written examinations and SBA in the public assessment as well as how the HKEAA moderates the SBA scores in their schools. In addition, T6 have revealed that they have designed effective SBA tasks to facilitate student learning and were able to implement SBA smoothly.

On the down side, workload derived from SBA was troubling T4, as indicated by their relatively lower confidence in handling this aspect. By the same token, more than half of T6 have revealed their inability in handling workload derived from SBA.

# 5. Discussion

The data reveal that the implementation of SBA in the NSS Curriculum has been a successful endeavor by both Government and the education sector at the administrative and teaching levels; at the administrative level, the majority of the major players - i.e. SH as well as KH of the education sector revealed that they have fully incorporated SBA into their schools; support measures were provided for teachers in the implementation of SBA, whereby working group and coordinators were designated to help teachers coordinate their subjects, and measures were employed to ensure fairness, objectivity and consistency in grading SBA works.

Meanwhile on the teaching level (T6, T4 and T3), teachers were well aware of their dual role in SBA (as facilitators of student learning and as assessors), whereby both teachers and students were also well informed of its contents, marking procedures (both by HKEAA and the school), and related information made readily available and transparent

at times of need. It is encouraging to see that the learning and teaching environment of the students was enhanced through the designing of effective SBA tasks.

Notwithstanding the above positive views from the major stakeholders, the implementation of SBA was met by perceptions of its overwhelming workload. Despite the schools' effort in scheduling subjects so as to avoid overloading students and teachers at some specific time of the year, a significant portion of T4 were skeptical of their ability to handle SBA workload whilst more than half of T6 from the sample felt that they were unable to handle the vast amount of work derived from SBA. As a general observation still yet to be tested in future studies, SBA workload might be the cause for the limited use of SBA for producing feedback for identifying strengths and weaknesses in students, thus helping them in their learning progress.

To realize the goal of "learning and teaching with assessment" through the implementation of SBA (HKEAA, 2013a), teachers should undergo professional training in understanding the curriculum's learning goals and related criteria so as to place further emphasis in producing assessment feedbacks for students – as the streamlining of SBA should provide more time for teachers to do so. And as suggested by Harlen (2004), the development of an assessment community is essential for allowing a constructive and positive discussion on SBA, in which different intra- and inter-school stakeholders among various geographical settings can contribute to this community. These discussion topics may include the distribution of resources, intra- and inter-school moderation standardization, teacher assessment, and ongoing professional trainings etc., so as to promote quality assurance for SBA.

# 6. Conclusion

To maximize the benefits derived from the implementation of SBA, both the education sector and the Government bodies must identify the causes for the limited use of SBA in producing feedback and appraisals for the holistic development of students' learning profiles. The immense amount of SBA workload felt by the teachers cannot be neglected, thus HKEAA, CDC, EDB and as well as the education sector have worked hand in hand in improving this aspect of the NSS Curriculum, as seen by the recent streamlining measures in SBA subjects. The education sector has yet to experience these measures and studies are required in the future to identify the effectiveness therein.

As many believe in the high potential of what SBA can bring to the learning and teaching environment, an effective implementation of SBA in terms of its scheduling, standardization in grading, information flow and the overall support for both schools and teachers are inextricable components to the welfare and effective incorporation of SBA into the NSS Curriculum – in all of which the Hong Kong education sector has

demonstrated its professionalism in accomplishing these and its commitment to rising to new challenges.

## Acknowledgements

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# Appendix

## Questionnaire for School Heads / Deputy Heads (SH)

**New Senior Secondary (NSS) Curriculum Implementation Study 2011***

***This section is extracted from the NSS questionnaire for the purpose of this paper.***

Dear School Heads / Deputy Heads,

The Education Bureau (EDB) has commissioned The Chinese University of Hong Kong to conduct the Study on the Implementation of the New Senior Secondary (NSS) Curriculum. As part of the Study, we would like to collect your views which would provide information for the EDB to strengthen school support and improve the effectiveness of implementation. Please be assured that the questionnaire will be kept strictly confidential and anonymous. All collected information will be used exclusively for evaluating the implementation of the NSS curriculum, and no reference will be made to any individual information. Thank you.

Centre for Enhancing English Learning and Teaching (CEELT)
Faculty of Education
The Chinese University of Hong Kong

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| To what extent do you agree that the items below describe curriculum implementation in your school **since the 2009/10 school year**? | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| **School-based Assessment (SBA)** | | | | | | |
| 1. SBA has become an integral part of the school's internal assessment. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. The school provides teachers with adequate support in the implementation of SBA. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. Teachers have clearly explained to students the complementary nature of written examinations and SBA in the public assessment. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| To what extent do you agree that the items below describe curriculum implementation in your school **since the 2009/10 school year**? | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| 4. Teachers have clearly explained to students the assessment requirements and methods in the SBA of their respective subjects. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. Teachers clearly understand how the HKEAA moderates the SBA scores across different schools. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. The school has designated a working group / coordinator to coordinate the implementation of SBA among subjects (e.g. the amount of tasks, timing). | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7. The school has devised an SBA schedule for all subjects so as to avoid overloading students and teachers at some specific time of the year. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8. The school has established appropriate procedures and regulations for conducting SBA to facilitate its effective implementation. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9. The school has put in place a mechanism to ensure objectivity and fairness in SBA. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10. The school has formulated procedures to handle students' queries on SBA results. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

# Questionnaire for Key Learning Area coordinators and subject panel heads (KH)

**New Senior Secondary (NSS) Curriculum Implementation Study 2011***

***This section is extracted from the NSS questionnaire for the purpose of this paper.***

Dear Key Learning Area coordinators and subject panel heads,

The Education Bureau (EDB) has commissioned The Chinese University of Hong Kong to conduct the Study on the Implementation of the New Senior Secondary (NSS) Curriculum. As part of the Study, we would like to collect your views which would provide information for the EDB to strengthen school support and improve the effectiveness of implementation. Please be assured that the questionnaire will be kept strictly confidential and anonymous. All collected information will be used exclusively for evaluating the implementation of the NSS curriculum, and no reference will be made to any individual information. Thank you.

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| To what extent do you agree that the items below describe how your KLA / subject panel implements learning and teaching strategies **since the 2009/10 school year**? | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| **School-based Assessment (SBA)** | | | | | | |
| 1. SBA has become an integral part **of the internal assessment in my KLA/subject**. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. My KLA/subject panel provides teachers with adequate support in the implementation of SBA. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. Teachers on my panel fully understand their dual role in SBA – as facilitators of student learning and as assessors. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| To what extent do you agree that the items below describe how your KLA / subject panel implements learning and teaching strategies **since the 2009/10 school year**? | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| 4. Teachers on my panel have clearly explained to students the complementary nature of written examinations and SBA in the public assessment. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. Teachers on my panel have clearly explained to students the assessment requirements and methods in the SBA of their respective subjects. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. Teachers on my panel have clearly explained to students the school's procedures of handling students' queries on SBA results. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7. Teachers on my panel clearly understand how the HKEAA moderates the SBA scores across different schools. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8. Working together with other KLA coordinators / subject panel heads, we have devised an SBA schedule for all subjects so as to avoid overloading students and teachers at some specific time of the year. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9. My KLA/subject panel has put in place a mechanism to ensure objectivity and fairness in SBA. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10. My KLA/subject panel introduces measures to ensure consistency in assessment criteria among teachers. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

# Questionnaire for Teachers Teaching S4 (T4) and S6 (T6)

**New Senior Secondary (NSS) Curriculum Implementation Study 2011***

***This section is extracted from the NSS questionnaire for the purpose of this paper.***

Dear teachers,

The Education Bureau (EDB) has commissioned The Chinese University of Hong Kong to conduct the Study on the Implementation of the New Senior Secondary (NSS) Curriculum. As part of the Study, we would like to collect your views which would provide information for the EDB to strengthen school support and improve the effectiveness of implementation. Please be assured that the questionnaire will be kept strictly confidential and anonymous. All collected information will be used exclusively for evaluating the implementation of the NSS curriculum, and no reference will be made to any individual information. Thank you.

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| To what extent do you agree with the following descriptions? (Please focus on the **S4 / S6 subject you are mainly teaching** this school year.) | **For T4 only** | | | | | | | **For T6 only** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree | | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree | |
| **School-based Assessment (SBA)** | **[Items 1-4 are applicable to all S4 teachers except for Mathematics teachers]** | | | | | | | **[Items 1-11 are only applicable to S6 teachers who are mainly teaching the subjects that SBA will be implemented in 2012]** | | | | | | |
| 1. I support School-based Assessment (SBA) because it enables me to give feedback to students frequently. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| To what extent do you agree with the following descriptions? (Please focus on the **S4 / S6 subject you are mainly teaching** this school year.) | **For T4 only** | | | | | | **For T6 only** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree |
| 2. My school provides me with adequate support in the implementation of SBA. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. SBA enables students to demonstrate their ability in areas which cannot be assessed in public examinations. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. SBA enables students to have a better understanding of their own strengths and weaknesses. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. I have designed effective SBA tasks to facilitate student learning. | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. I have clearly explained to students the complementary nature of written examinations and SBA in the public assessment. | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| To what extent do you agree with the following descriptions? (Please focus on the **S4 / S6 subject you are mainly teaching** this school year.) | **For T4 only** | | | | | | | **For T6 only** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree | | Strongly disagree | Disagree | Slightly disagree | Slightly agree | Agree | Strongly agree | |
| 7. I have clearly explained to students the assessment requirements and methods in the SBA of my subject. | | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 8. I have already explained to students the school's procedures of handling students' queries on SBA results. | | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 9. I have clearly explained to students how the Hong Kong Examinations and Assessment Authority (HKEAA) moderates the SBA scores in my school. | | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 10. I can handle the workload brought about by SBA. | | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 11. So far I have been able to implement SBA smoothly. | | | | | | | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| When I teach **S5 in the coming school year**, I am confident that I can… | **For T4 only** | | | | | | |
|---|---|---|---|---|---|---|---|
| | Highly not confident | Not confident | Slightly not confident | Slightly confident | Confident | Highly confident | |
| 12. design effective SBA tasks to improve student learning. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 13. clearly explain to students the complementary nature of written examinations and SBA in the public assessment. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 14. clearly explain to students the assessment requirements and methods in the SBA of my subject. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 15. clearly explain to students how the HKEAA moderates the SBA scores in my school. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 16. handle the workload brought about by SBA. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

# 香港新高中課程下學校管理及教學人員眼中的校本評核

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**摘要**

校本評核為進展性評估模式之一，透過回饋及評估學生專題研習的表現，讓學生了解自己的弱項並加以改善，亦幫助教師調整教學策略（OECD, 2005）。校本評核就大部份高中科目而言仍屬新概念，然而自 2009 年推行新學制以來，校本評核已納入新高中課程；其成效在香港、以致世界各地均備受爭議。本研究引用 2011-12 年度新高中課程實施調查研究數據（涵蓋 91 所香港中學），探討學校管理及教學人員對校本評核的觀點。

**關鍵詞**

校本評核，進展性評估，新高中課程，課程改革，香港教育

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# *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<br>Total = 63 | Chinese Language<br>Total = 63 | Mathe-matics (CMI)<br>Total = 46 | Mathe-matics (EMI)<br>Total = 44 | Liberal Studies (CMI)<br>Total = 53 | Liberal Studies (EMI)<br>Total = 15 |
|---|---|---|---|---|---|---|
| 1. School by type of sponsorship<br>1 = Aided; 2 = Government;<br>3 = Direct subsidy scheme | Mode = 1 | N = 59<br>Mode = 1 | Mode = 1 | Mode = 1 | Mode = 1 | Mode = 1 |
| 2. School by the sex of students<br>1 = Boys; 2 = Girls;<br>3 = Co-educational | Mode = 3 | N = 59<br>Mode = 3 | Mode = 3 | Mode = 3 | Mode = 3 | Mode =3 |
| 3. Overall teaching experience<br>1 = 0 – 5 years; 2 = 6 – 10 years<br>3 = 11 –15 years; 4 = 16 – 20 years<br>5 = 21 years or more | Mean = 4.1<br>Mode = 5 | N = 59<br>Mean = 4.2<br>Mode = 5 | Mean = 2.7<br>Mode = 3 | Mean = 2.7<br>Mode = 3 | Mean = 3.6<br>Mode = 3 | Mean = 3.1<br>Mode = 5 |
| 4. Teaching experience in this subject<br>1 = 0-5 years; 2 = 6-10 years<br>3 = 11-15 years; 4 = 16-20 years<br>5 = 21 years or more | Mean = 4.1<br>Mode = 5 | N = 59<br>Mean = 4.0<br>Mode = 5 | Mean = 4.1<br>Mode = 5 | Mean = 4.1<br>Mode = 5 | Mean = 1.7<br>Mode =1 | Mean = 0.9<br>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<br>Mode = 0 | Mean = 1.3<br>Mode = 1 |
| 6. Mean no. of classes | | N = 59 | | | | |
| (a) Form 4 (2009-10) | Mean =3.9<br>Mode = 5 | Mean = 4.3<br>Mode = 5 | Mean = 4.1<br>Mode = 5 | Mean = 4.6<br>Mode = 5 | Mean = 4.7<br>Mode =5 | Mean = 4.4<br>Mode = 5 |
| (b) Form 5 (2010-11) | Mean = 3.9<br>Mode = 5 | Mean = 4.4<br>Mode = 5 | Mean = 4.5<br>Mode = 4 | Mean = 4.6<br>Mode = 5 | Mean = 4.7<br>Mode = 5 | Mean = 4.5<br>Mode = 5 |
| (c) Form 6 (2011-12) | Mean = 3.9<br>Mode = 5 | Mean = 4.4<br>Mode = 5 | Mean = 4.6<br>Mode = 5 | Mean = 4.6<br>Mode = 5 | Mean = 4.7<br>Mode = 5 | Mean = 4.4<br>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<br>1 = Overall rank; 2 = Performance in Chin., Eng. & Maths.; 3 = other criteria | Mode = 1 | N = 59<br>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<br>Mode = 4 | N = 58<br>Mean = 8.1<br>Mode = 5 | Mean = 6.6<br>Mode = 5 | Mean = 6.6<br>Mode = 8 | Mean = 5.7<br>Mode = 6 | Mean = 7.7<br>Mode = 6 |
| 11. No. of teachers who had already taken the basic assessment course in this subject | Mean = 7.5<br>Mode = 5 | N = 57<br>Mean = 7.8<br>Mode = 5 | Mean = 6.5<br>Mode = 5 | Mean = 6.5<br>Mode = 5 | Mean = 7.6<br>Mode = 8 | Mean = 7.7<br>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<br>Mode = 1 | Mode = 1 | Mode = 1 | Mode = 1 | Mode = 1 |
| 2. The extra resources are<br>1 = provided to weaker students only<br>2 = provided to top students only<br>3 = equally shared among all students | N = 52<br>Mode = 3 | N = 39<br>Mode = 3 | N = 27<br>Mode = 3 | Mode = 3 | N = 41<br>Mode = 3 | N = 12<br>Mode = 3 |
| 3. No. of types of other resources provided to the subject | Mean = 1.5<br>Mode = 1 | Mean = 0.8<br>Mode = 1 | Mean = 0.7<br>Mode = 0 | Mean = 0.7<br>Mode = 0 | Mean = 1.3<br>Mode = 1 | Mean = 1.1<br>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<br><br>Total = 63 | Chinese Language<br><br>Total = 63 | Mathe-matics (CMI)<br>Total = 46 | Mathe-matics (EMI)<br>Total = 44 | Liberal Studies (CMI)<br>Total = 53 | Liberal Studies (EMI)<br>Total = 15 |
|---|---|---|---|---|---|---|
| 1. Most recent type of activity held to enhance the teaching of the subject | Drama / opera / movie | N = 31<br>Drama / opera / movie | N = 7<br>Visit | N = 6<br>Museum visit | N = 37<br>Visit | Writing course |
| 2. How often has your panel organised trips or visits since F5 to enhance the teaching of the subject?<br>1 = Very often;<br>2 = Often;<br>3 = Sometimes;<br>4 = Occasionally;<br>5 = Rarely or none | N = 62<br><br>Mean = 4.3 | N = 57<br><br>Mean = 4.0 | N = 42<br><br>Mean = 1.5 | N = 41<br><br>Mean = 1.4 | N = 62<br><br>Mean = 3.6 | N = 62<br><br>Mean = 1.1 |
| 3. Have the trips or visits helped the weaker students to enhance their learning?<br>(5 = Very much so; 1 = Not at all) | Mean = 3.1<br>Mode = 5 | N = 59<br>Mean = 2.6<br>Mode = 3 | Mean = 1.7<br>Mode = 1 | Mean = 1.7<br>Mode = 1 | Mean = 3.0<br>Mode = 3 | Mean = 3.3<br>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<br>Total = 63 | Chinese Language<br>Total = 63 | Mathe-matics (CMI)<br>Total = 46 | Mathe-matics (EMI)<br>Total = 44 | Liberal Studies (CMI)<br>Total = 53 | Liberal Studies (EMI)<br>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<br>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<br>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<br>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<br>1.4 | 1.2 | N = 43<br>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<br><br>Total = 63 | Chinese Language<br><br>Total = 63 | Mathe-matics (CMI)<br>Total = 46 | Mathe-matics (EMI)<br>Total = 44 | Liberal Studies (CMI)<br>Total = 53 | Liberal Studies (EMI)<br>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<br>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<br>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<br>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<br>Mode = 2 | Mode = 2 | Mode = 2 | Mode = 2 | Mode = 1 |
| 3. What are those support materials? (1= used; 2 = not used) | Mean | N = 59<br>Mean | Mean | N = 42<br>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<br>Mean = 1.8 | N = 59 | N = 44 | N = 43<br>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<br>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<br>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.<br>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.<br>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.<br>2 = Students are streamed by another criterion. | Mode = 1<br>Mean = 1.2 | Mode = 1<br>Mean = 1.8 | N.A. | N.A. | Mode = 1 | Mode = 1 |
| (d) 1 = Classes/students are taught by different teachers.<br>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.<br>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<br>Mode = 1 | Mean = 1.2<br>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<br>Mode = 5 | Mean = 4.4<br>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<br>Mode = 3 | Mean = 3.4<br>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?<br>1 = 0-25%; 2 = 26-50%;<br>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?<br>1 = Lack of support funding<br>2 = Lack of supplementary reference for teachers<br>3 = Lack of training for teachers<br>4 = Diversified abilities of students<br>5 = High demand on students<br>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<br>2 | 1.3<br>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<br>4.5 | N = 59<br>2.7 | N = 10<br>2.6 | N = 10<br>2.6 | N = 24<br>4.2 | N = 6<br>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<br>sig. 0.433 > 0.05<br>Phi 0.306 moderate;<br>sig. 0.433<br>Spearman rho -0.278*<br>weak; sig. 0.028 < 0.05<br>Kendall's tau-b -0.257*<br>modest; sig. 0.017 < 0.05 | Pearson chi-square 6.510<br>sig. 0.369 >0.05<br>Phi 0.332 moderate;<br>sig. 0.369<br>Spearman rho -0.007<br>weak; sig. 0.961 >0.05<br>Kendall's tau-b -0.006<br>weak; sig. 0.957 >0.05 | / | / |
| 17. Complexity in daily assessment | Difficulty in implementing the SBA of Writing | Pearson chi-square 8.074<br><br>sig. 0.233 > 0.05<br>Spearman rho -0.283*<br>modest; sig. 0.024 < 0.05<br>Kendall's tau-b -0.255*<br>modest; sig. 0.016 < 0.05 | Pearson chi-square 4.046<br>modest;<br>sig. 0.400 >0.05<br>Spearman rho -0.141<br>modest; sig. 0.288 >0.05<br>Kendall's tau-b -0.133<br>modest; sig. 0.263 > 0.05 | / | / |
| 18. Complexity in daily assessment | Difficulty in implementing the SBA of Speaking | Pearson chi-square 12.203<br>sig. 0.058 > 0.05<br>Phi 0.44 moderate;<br>sig. 0.058 > 0.05<br>Spearman rho -0.398**<br>moderate; sig. 0.001<br>Kendall's tau-b -.370**<br>moderate;<br>sig. 0.000 < 0.05 | Pearson chi-square 8.01<br>sig. 0.432 > 0.05<br>Phi 0.368 moderate;<br>sig. 0.432 > 0.05<br>Spearman rho -0.101<br>weak; sig. 0.448 > 0.05<br>Kendall's tau-b -0.092<br>weak;<br>sig. 0.401 > 0.05 | / | / |
| 19. Complexity in daily assessment | Difficulty in implementing the SBA of Integrated Skills | Pearson chi-square 4.426<br>sig. 0.619 > 0.05<br>Phi 0.265 modest;<br>sig. 0.619 > 0.05<br>Spearman rho -0.187<br>modest; sig. 0.142 > 0.05<br>Kendall's tau-b -0.172<br>modest; sig. 0.126 > 0.05 | Pearson chi-square 2.712<br>sig. 0.607 > 0.05<br>Phi 0.214 modest;<br>sig. 0.607 > 0.05<br>Spearman rho -0.126<br>modest; sig. 0.341 > 0.05<br>Kendall's tau-b -0.117<br>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<br>Phi 0.256 modest; sig. 0.746 > 0.05<br>Spearman rho -0.058 weak; sig. 0.682 > 0.05<br>Kendall tau-b -0.54 strong; sig. 0.657 > 0.05 | Pearson chi-square 22.355* sig. 0.008 < 0.05<br>Phi 1.221* very strong; sig. 0.008 > 0.05<br>Spearman rho 0.133 weak; sig. 0.636 > 0.05<br>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

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# 香港通識教育科的現況及前瞻

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## 摘要

本文從三種不同課程實施的取向，討論通識教育科的現況和發展。在課程實施的過程中，學校和教師偏向以相互調適取向實施通識教育科課程，並以不同的單元設計和教學方式進行，當中發現種種挑戰。本文建議，未來的課程實施宜邁向創生取向（或稱締造取向）。

## 關鍵詞

通識教育，課程實施，課程發展

## 甲、緣起及研究方法

時光飛逝，轉眼間曾掀起香港教育界激烈討論的通識教育科（下稱通識科），已推行了三年，第一屆通識科的公開考試結果也已揭曉，初步衍生了一些成功的經驗，也察覺到一些挑戰，是時候為它把把脈，以檢視其現狀，總結其經驗，思考其未來。

作為新生科目的通識科，能否取得持續的成功和發展，達到預期的效果，有賴於課程之實施模式及策略的恰當選擇。因此為通識科「把脈」，是包括釐清其課程實施的理論脈絡，亦同時需要檢視該科現今施行的狀況資料，方可得出具有啓發性的結論，冀有利其將來之課程發展。本文除了筆者之課程理論探討，亦着重引用質化及量化資料及數據之分析。量化資料是參考兩個民間大型通識科之現況調查（其一為 2012 年，香港教育專業人員協會（教協）、香港通識教育教師聯會及嶺南大學做的問卷調查，調查對象

包括 647 名通識科老師及 2,806 名學生，內容主要涉及他 / 她們對通識科之教與學的觀感。另一為教協從 2010 至 2013 連續四年都有做的通識科老師觀感調查，平均每年皆有 800 份有效問卷）。至於質化資料方面，主要來自筆者分別訪談兩位資深通識科專家暨老師專業培訓員 —— 陳岡博士及黃志堅先生。訪談以非結構形式進行，環繞着兩位對現今通識科現況之個人觀感，及探討兩位對通識科前境作專家之闡析及建議。下文首先從課程實施理論層次分析通識科現今之實施狀況，並作出專業之建議，望能導引通識科走上較理想的發展蹊徑。再從量化結合質化之研究分析結果，找出通識科現今推行情況之強弱項，並以專業意見提出強項之鞏固及弱點之修訂建議，目的亦是作出前瞻性之改善建議。

## 乙、課程實施模式之檢視

所謂課程實施，即將課程現狀導向所欲的學習結果，也就是將課程計劃付諸行動的過程。就算再完善的課程設計，若不能得到教師的理解與接納，並將其在課堂中付諸實施，都始終是「文本」而已（黃政傑，1994）。

一般而言，課程實施有三種模式（忠實模式、調適模式及創生模式）（李子建、黃顯華，1996；鍾啓泉，2005），以下筆者先對這三種模式作一簡單分析，為通識科的課程實施現狀的剖析提供理論的參照。

(1) 忠實取向（fidelity orientation）的課程實施，是指課程實施為忠實地執行課程計劃的過程。因此，在這種取向下，課程成功與否，其標準在於最終實施之課程與預定課程計劃的落差程度。實施的課程愈接近預定的課程方案，則愈為忠實，也愈成功。反之，若與預定的課程計劃差距愈大，則愈不忠實，效果愈差。這種取向強調的是預定計劃之優越性及重要性，負責實施的教師則被視為教學「技工」，應忠實地執行課程專家所制定的各項細節。可以說，這種取向沒有給予老師任何修訂或彈性調適課程的空間。忠實取向若走到極端的地方，可能變成課程當局為了切實執行一己的課程觀，而設計一種「防老師」（teacher-proof）的課程，要老師鉅細無遺的執行課程指引每項細節，因此損害老師的課程專業地位。另外一種不利學生學習之情況，就是老師礙於形勢，往往把不適當的課程硬套在學生頭上，或是奉行一種「陽奉陰違」式的「表面課程」（surface

curriculum）（Bussis, Chittenden & Amarel, 1976），俱大大損害學生學習利益。

(2) 相互調適取向（mutual adaptation orientation）是人們認識到「忠實取向」之限制及缺憾而衍生的一種較符合現今教育脈絡及現代思潮的課程實施模式。在這種實施模式下，教師作為課程實施者，會考慮中央頒布下來的課程應如何在其課室裡實踐，或作出調整，以適應其課室情境的特殊需要。這意味着老師身為課堂之課程實施者，總是在因應各種具體實踐情境而調整既定的課程方案，以適應學生的特殊需要。因此，調適模式要求教師充分發揮自己的實踐智慧，對中央課程、學校情境及學生之需要進行綜合考慮，以塑造有效的校本 / 班本課程。顯然，這種課程實施模式，對老師的專業要求很高。老師既要能充分理解中央課程之關鍵概念、核心技能及態度，又要清楚其學生之學習能力、需要及特性，才能剪裁一套能平衡中央及校本需要的課程。

(3) 創生取向（或稱締造取向）（curriculum enactment orientation）下的課程實施，則是師生在具體的課堂情境中共同合作、創造新教育經驗的過程。因此，根據這種取向，真正課程並不是在實施之前便預定下來，它是因應情境、人物而衍生出來的，有着解放教育理性之功用。此種課程可能完全脱離中央課程而出現為一種師生共塑的實驗性質的課程。

通識科課程作為一門文理綜合的科目，是由「自我與個人成長」、「社會文化」及「科學、科技與環境」三個學習範疇組成，強調跨學科思維技能的「獨立專題探究」（課程發展議會、香港考試及評核局，2007）。其在學校和課堂層面的實施則涉及單元的規劃、教學人員（及團隊）的組構、教師運用各教學方法和評估方式的變化、學生在「獨立專題研究」的參與和學習，以及課程與公開考試的配合等不同環節，情況頗為多元化和複雜。因此有效的實施，必然要求教師作為「課程主人」，因應自己所處的教學情境對課程進行調適。因此，忠實取向的課程實施並不適用。

另一方面，現有的通識科中央課程指引在課程目標和內容架構上給出了頗為明確的指引，同時亦為教師詮釋、修訂和剪裁課程提供了空間，即是說，中央的課程政策乃鼓勵教師採取調適的課程實施取向 —— 也就是鼓勵各學校因應其學校特色、學生程度、通識科老師的課程知能及覺知，設計一個平衡中央通識科要求及個別學校師生需要的調適課程。

然而，正如上文所說，課程調適對老師的課程知能及課程覺醒均要求甚高，缺乏相應經驗的教師難免遇到困阻。因此，就較理想的情況而言，部份學者如林德成（Lam, 2007）認為通識科的推行宜以全校課程發展取向（whole-school curriculum development approach）較一個教師合作團隊的 2 至 3 位教師的組合為佳。這是由於少數教師的協作可能會導致「小圈子」合作，而通識科以外的教師可能會採取「隔岸觀火」的態度看待通識科，學科間將會出現競爭的情況。

林德成（Lam, 2007）根據過往目標為本課程和香港躍進學校計劃（Lee, 2006）的經驗，認為若通識科以全校取向推行，能產生校內不同教師在視野上的融合（fusion of horizons）(Gadamer, 1975)，對學生和教師在議題上不同的見解能產生良性的互動和對話，理性地探討對方觀點上可能存在的誤解與偏見。這種不斷互動而衍生話語融合的方式在某種程度上符合創生或締造取向精神。這種全校課程發展取向，要求學校重視「互動」、「溝通」和「決策」，「創造課程發展空間」，令學校成員能「集思廣益」、「建立共享目標和信念」（Lam, 2007, p.52-56）。將這些條件及氛圍轉化成可操作性的學校課程舉措，就是可以看成通識科（尤其是「獨立專題探究」一環）是一師生共同塑造之通識探究旅程，學校是成功形塑為一所「思考的學校」（a thinking school），內裡孕育多元聲音、多元批判、多元視界及多元締造之環境，有締造意識及能力之老師及學生可跨越現今通識科之藩籬，互相支持砥礪下探索一面又一面之新的視界。這種情境氛圍正正是通識科老師從現今之「調適取向」，慢慢邁向真正「創生或締造取向」之必經過程，也標誌着「創生或締造取向」之可欲性（desirability）及可行性（possibility）。

朱嘉穎（2009）亦有類似看法。她從教師專業發展理念研究香港某大學開設有關通識教育課程發展與教學的碩士課程學員的看法，部份結果顯示（頁 64-65）：「教師在實踐理念的過程中，需要對所處的教學情境作出分析和判斷，並根據這些判斷對所採用的理念作出適切的調適……雖然，來自不同學校的不同教師對同一理念的解讀會因為個人經驗和情境脈絡的不同而出現差異……在彼此的分享和交流中，學員們增進了個人對相關理念的認識和理解。更為重要的是，在一個有相同目標的學習共同體中，學員們找到了志同道合的同行者，即使面對困惑，教師情感上的負擔也得到略微的釋放」。因此，無論在校內或校外，如果個別或少數教師能超越校內「學科」藩籬，以開放互動的心態建立校內及校外的「學習社群或共同體」，這有助於締造老師們對通識科的精神更接近理解，就算不能建立完全一致的看法，至少「和而不同」，尊重對方多元的觀點。

易言之，就通識科的課程實施來說，傳統理論中所強調的相互調適取向是必要的，然而當前更為重要的是鼓勵一種全校課程發展取向，建構師生及師師的學習社群，為學校邁向創生取向的課程實施創造充足的條件和寬鬆的環境。

## 丙、課程實施的問題與反思

探討通識科課程實施這課題，讓我們首先從課程的單元規劃來看，吳家傑、李子建、楊秀珠（2009）根據他們所支援的學校經驗，認為單元規劃策略大致可分為三大類型。第一類為六個單元鋪排，獨立地施教，然後以跨單元方式補習，偏向「科目本質」的立場，較強調「獨特專有」的取向。第二類為六個單元鋪排，不過先讓學生認識不同單元的相關概念，假定六個單元有相若的深度，偏向「單元本質」的立場和「兼容等同」的取向。第三類是把六個單元再細分為 7 至 12 個主題，再按同一單元不同主題的深淺、學生學習的需要作調動，較偏向「順序本質」和多元化的取向（吳家傑、李子建、楊秀珠，2009，頁 71）。這些策略反映出不同學校及教師對通識科課程的單元規劃具有多元化的現象，究竟哪些策略較配合學生的需要和促進學生學習成果，仍有待進一步研究。

另一方面，通識科課程及評估指引中強調通識科的教學應達到三方面的效果，即所謂的 ABC，Awareness、Broadening 及 Critical / Creative thinking。

社會事宜的「察覺」（Awareness）是指學生對社會、國家以至國際大事產生興趣，對自己身為社會公民的身份、權利及義務之覺醒。觀乎現狀，這方面通識科的課程實施，似乎頗有成效，如愈來愈多的中學生參與公共社會活動（如社會示威），且其中個別領頭者的表現令人刮目相看。但這些現象是否確實為通識科學習之結果，尚需實證研究加以證實。許寶強亦有撰文，促各界更謹慎看待通識科之公開考試成績與近年來青年人參與社運激增之微妙關係（許實強，2012）。

至於 Broadening 所指的「擴闊知識及視界」則似乎並未「到位」，而且遭到教師與學生之批判，認為課程覆蓋面太廣，令教與學均見困難。Critical / Creative thinking，即批判 / 創意思考。現階段學生在這方面的表現亦有待加強。有報章報導，網上討論區發現年青人容易墮入簡單「二分法」謬誤，採取非黑即白及「不支持 XXX」等於「反對 XXX」等角度看待事物。總體來說，年青人較前更關注社會政治事宜，但其視野及批判思維，尚有改善空間。當然，這種觀察亦須取得實證證據，立論方能成效。

2012 年度首屆文憑試結果出爐，通識科考獲二級程度的考生達 90% 之高。從數據來看，通識科的課程實施似乎是成功的，然而對課程實施者 —— 教師的問卷調查卻顯示，當前的通識科課程實施中尚有不少問題，亟需我們關注和回應。

有關通識科的實施情況，上文所說共做了兩個大型調查研究。現將兩個調查之重要發現歸納如下：

2012 年之教協、香港通識教育教師聯會及嶺南大學做的問卷調查發現，老師認為通識科發展的首六個主要困難和挑戰，依次是：（1）要照顧太多學生、（2）學生水平不足以應付課程、（3）學生對課程內容不感興趣、（4）教育當局的考評指引不清晰、（5）缺乏好的教材，及（6）教育當局課程指引不清晰等。學生方面，所面對的主要困難和挑戰，包括：（1）課程內容太廣和缺乏焦點、（2）老師的相關知識及支援不足、（3）通識的考核方法令學生難以捉摸其評分標準、（4）學習通識變成了背誦術語等的考試技巧、（5）沉悶、（6）工作量太多，及（7）難度過高等等（頁 14）。另外，一些重要的調查數據亦列舉如下：

1. 超過一半學生（55%）對獨立專題探究最不感興趣，有超過六成教師及五成學生認為需要刪除；
2. 有四成教師及學生認為學生做獨立專題探究時，是馬虎了事；甚至有約三成教師及學生認為學生做獨立專題探究時，有弄虛作假情況；
3. 約六成教師和接近五成學生認為，通識科內容太多；
4. 接近一半教師不滿負責通識科和考評官員的專業水平，課程指引之清晰度，及教學支援。

2012 年教協所做的調查結果則顯示，連續四年通識科老師認為任教該科的最大之四個困難，分別為：（1）照顧學生學習差異、（2）準備 / 更新課程教材、（3）處理獨立專題探究、（4）教授學生批判、反思和獨立思考能力，其中「照顧學生學習差異」一項連續四年居於首位。

該調查有另一個令人感興趣的發現，有超過三成老師對帶領學生進行「獨立專題探究」的信心在 5 分或以下，為第二個最沒信心項目（第一個為教授「現代中國」）。而且平均每位老師須帶領 35.7 學生進行「獨立專題探究」，甚至有 18% 老師竟是帶領 50

人之鉅！

另外，有關修改課程建議方面，大多老師認為須「減少課程內容」（69%）、「刪減單元數目」（60%），或「將部份單元轉為選修」（57%）。

上述兩個調查結果跟質化訪談結果有頗大共同點（質化訪談是筆者圍繞着「你認為現今通識科的現況及困難為何？」及「你對你所指出的困難有何改善建議？」兩大課題，向兩位專家作一非結構式訪問）。問卷調查歸納出來的結果大致是（1）每班學生太多，以致學習差異大、（2）學習範圍太深太闊，而且課程及考評的指引不清晰，以致老師被迫「過度教學」（over-teaching）、（3）師生都對「獨立專題探究」感棘手，及（4）老師對提升學生之批判思維及獨立思考能力欠信心。訪談結果也歸納出三點，指出目前通識科教師最關注的問題分別是「過度教學」、課程指引中的目標轉化欠清晰及「獨立專題探究」定位失衡。三者亦互為影響。「學習差異大」問題涉及學校資源及教育局的「小班教學」措施，短期內也未見解決之契機，故此，本文暫不贅言。而對於提升學生之批判思維一項，將於下文闡析。現集中分析其餘三個議題如下：

## 一、「過度教學」及改善建議

通識科之所以會導致「過度教學」，是因為六個單元對大多數老師和學生來說太闊太深，老師們都因為憂慮公開考試要求很高、範圍很廣，而選擇多教一些內容，力求寧濫莫缺，以保障考試成績。當然，這也與課程指引不夠具體清晰有關。例如在「科學、科技與公共衛生」單元中，課程指引建議可探討下列課題及副題：

*公共衛生與社會發展的關係，如：*
*- 用於公共衛生服務的資源及資源分配情況*
*- 文化、制度及經濟等因素對生活模式的影響*
*- 教育對公共衛生的影響*

（課程發展議會、香港考試及評核局，2007，頁 38）

上述第一個副題所包含的教學範圍較清晰具體，學生及老師能清楚知道哪些知識概念跟此是相關的。但另外兩個副題所觸及之範圍則過於廣泛而至模糊不清，師生不知從何入手。最近香港通識教育教師聯會做了一個中期通識科課程檢討，針對這「過度教學」

問題，作了三個「瘦身方案」建議，同時亦作出一忠告 ──「若刪剪太多，則可能有損通識作為必修科所需的闊度，宜小心平衡」（香港通識教育教師聯會，2013），值得各界熱心通識科發展人士深思。

## 二、課程目標轉化不清晰

課程目標轉化對教與學的影響，固然與課程目標本身的闡述有關，但現時香港學校教育中的考試的「倒流效應」（washback effect）（Wall, 1997）亦是問題的癥結之一。因為，相對於課程目標指引，公開考試的形式和內容似乎更直接影響着教師對課程的規畫、教學和校內評估的設計。如兩位訪談學者反映，教師希望評分標準能作較長期之穩定化，及現行之「標準參照評核模式」（standard-referencing assessment）能更公開和清晰，並且提供更多的答題範本（sample scripts），以便於他們因應評估標準來準備教學。

有關方面應對課程目標的轉化加以更為具體的說明，以幫助教師對教學的重點有更清晰的理解與把握，但另一方面，持份者也應警惕這種「為測驗而教學」（teaching for the test）的課程實施行為，避免通識科老師為了應付公開考核之廣度，而犧牲教學上之深度，喪失了通識科獨有之意義及貢獻。（註：根據最新發表的《通識教育科課程與評估資源套 ── 釐清課程、評估有方》文件（香港特別行政區政府教育局、香港考試及評核局，2013），內裡羅列不少各單元的學與教重點及建議探究例子，均切合實際教學目標和學生需要，可消弭上文所批評之「課程目標不清晰」之弊）。

## 三、「獨立專題探究」之落差

「獨立專題探究」（Independent Enquiry Study, IES）定位失衡是另一較為突出的問題。根據香港課程發展議會，通識科的獨立專題探究，「容許學生在獨立專題探究部份選擇適合自己的興趣和志向的課題進行探究」（課程發展議會、香港考試及評核局，2007，頁 7）。IES 是通識科學習重要的一環，其設計旨在提供一種自主學習的經歷，讓學生負起學習的主要責任，並發揮自我管理能力，以進行自訂主題的探究研習。「而教師的責任是幫助學生達到他們的學習目標，隨着學習者的能力增強，教師的輔助應該逐漸減退，以便將學習的控制權逐步轉移到學生身上」（頁 81）。因此通識科的獨立專題探究，如果實施得宜，可逐步邁向前文所說之創生或締造取向的課程實施理想。

然而教協及通識教師聯會的調查卻發現獨立專題探究中的「弄虛作假」情況不少。

能力不逮的學生做來叫苦連天，教師的教導、監督及批改也吃力不討好。原因是教師很多時候將其視為學術研究，以致會操練學生統計方法、問卷調查及訪談技巧，而非一種自主探究的學習活動，結果令學與教束手縛腳，效果不彰。

筆者建議撥亂反正，減低現在因公開考試而要求高度標準化的評估要求。考評局應多下放權力予學校更好設計獨立專題探究，使之與校本評估作無縫式結合，為教師恢復獨立專題探究本來面貌 —— 探究為主的學習活動 —— 提供空間。香港通識教育教師聯會的中期報告也有檢討「獨立專題探究」之存廢，亦提出若果取消獨立專題探究，則「學生 [ 會 ] 失去一個甚有學習意義的學習活動」，其言亦堪咀嚼。

## 丁、課程未來發展之前瞻

對於以上問題的解決，通識科教師作為課程實施者亦有自己的觀點和建議。香港教育專業人員協會教育研究部（2012）的調查結果顯示，教師認為下列九項措施是解決通識科問題最有效益的措施（2010 及 2011 年前九名的排序相同）：（1）小班教學、（2）增加通識常額教席、（3）更多專科資源、（4）增撥學習差異資源、（5）暫緩自評外評、（6）轉為選修選考、（7）只評合格或不合格、（8）評審通識教科書，及（9）提供更多到校支援（頁 34）。除了增撥人手和資源外，教師也期望在「獨立專題研究」和「課程範圍」方面有所改善。需要強調的是外部的資源、環境與評核固然是影響課程實施效果的重要且必要之因素，但通識科要真正邁向「創生或締造」的課程實施取向，更為重要的是教師之間、師生之間應視通識科為一持續性之教與學成效之探索旅程，不可輕言放棄。通識科出現問題的成因頗為複雜，可能是學生之獨立思考及批判思維能力不彰，也可能是老師的教學效能有待強化或批判思維及意識不高。後者構成了重要的教師課程知能及意識需再提升和探究之課題。這兩方面之提升都會有助老師課程績效，不容輕視。要做到這種多元視域交流，以達致「視域的融合」，課程發展處、學校課程領導階層、大學師訓機構及通識科教師學會組織，皆可多舉行全校老師專業對話、同儕對話、學者老師對話、邀請外界講者、及師生對話等活動。藉着這些對話及視界交流才能令老師……

*能正視自己的角色與生活，願意從新的觀點、運用新的思維，來重新檢視過往「視為當然」的課程實務與「習焉不察」的教學實踐，才可能有所覺醒*

*（awakening），才可能激發「課程意識」（curricular consciousness）、促進「教學覺知」（pedagogical awareness）……*（甄曉蘭，2003，頁 72）

有了這些「課程意識」及「教學覺知」，老師便會「知道」和「明白」更多，並能建立一個多面向的知識庫，及擁有專業覺知精神，知所批判，及知所捍衛。只有這樣的老師及其產生的多元批判情境脈絡，才能教導出有獨立理性及批判思維的下一代。也只有這樣的學校課程氛圍才能產生真正的「課程共識」，乃至「視域的融合」，實現通識科課程的「創生或締造」課程觀（白雲霞，2003，頁 60；李子建，2010，頁 14；Lam, 2007）。

因此日後通識科的發展，除了考慮小班教學及增加常額通識科老師外，大學、教師教育機構、課程發展處及通識科老師學會，應多重視協力挑起提升老師課程知能及意識責任；共同形塑一全港性的專業對話及視界交流平台，俾能讓通識科老師對不同聲音和經驗多見、多聞、多思考、多交流，從以重構其課程觀及教學實踐。至於各學校之領導層及課程領導亦宜配合這一大環境之對話交流氣氛，多做一些相應的教師發展工作。容萬城（2005）指出三種專業教師發展模式皆適合通識科老師，分別為知識與技能發展、自我理解及生態轉變[1]（Hargreaves & Fullan, 1992；李子建，2002，2005）。筆者認為其中之「自我理解」模式似適合本文所指之建構校本對話及視界交流氛圍。若能成功建構及持續發展，及過渡至「生態轉變」模式，必能形塑全校學與教之多元化及批判思維模式，令老師及學生得益，也令通識科獨有的學科貢獻得以彰顯。

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# *The present and the future possibilities of Liberal Studies in Hong Kong*

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## Abstract

This paper discusses the status and development of Liberal Studies from three different orientations of curriculum implementation. It is argued that schools and teachers tend to adopt a mutual adaptation orientation to implement the Liberal Studies curriculum with varying modes of module design as well as teaching and learning. Challenges are identified during curriculum implementation. It is proposed that it may be desirable to move towards a curriculum enactment orientation in future implementation.

## Keywords

Liberal Studies, curriculum implementation, curriculum development

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# 新高中視覺藝術科考評制度對課程潛在的影響

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## 摘要

本文嘗試以「考評制度」及所引伸的現象，檢視視覺藝術科文憑試評分模式會否對視覺藝術教育課程帶來影響。當中發現考評制度中四個面向，有可能對課程帶來影響，分別為：(1) 作品集呈交方法；(2) 藝術評賞依據「成就描述」的評核方法；(3) 文字在評核中佔據的角色；(4) 藝術評賞的考核安排。考評制度成效的關注層面，並非只就學生成績的個人層次作判斷，而是檢視整個「考評制度的機制」，並須瞭解學生學習成果是否達到預期設定的目標。

## 關鍵詞

考評制度，成就描述，藝術評賞

## 甲、前言

從最新有關「新高中視覺藝術科」（以下簡稱：視藝科）文憑試的教師意見調查顯示，不少教師認為新高中課程推展後，並不認同視藝科於任教的學校發展前景更為理想（視藝教育關注核心小組，2013）。另一方面，在以往七年改革期間，有學者藉課堂觀察、訪問及抽樣調查研究，發現教師及學生基本上認同視藝科改革的方向；學者更指出「改革能重現視覺藝術教育的本質價值」（黃素蘭，2011）。兩者的意見為何出現如此大的分野？及至首屆文憑試視藝科成績揭曉，達至 5 級或以上的僅有 6.1%。不少民間團體自

發進行研究、發表文章，以及舉行研討會，以不同持份者的角色作出回應。前線教師普遍認為評核的準則、考核範圍及作品集的呈分方式等均是爭議所在。教育作為糾結複雜的場域，要探討教育的現象，必須有一個切入點進行分析（吳毓瑩、吳麗君，2002）。本文嘗試以「評估制度」檢視新高中視覺藝術科文憑試評分模式，對視覺藝術教育本質所帶來潛在的影響。

## 乙、考評改革回應時代轉變

全球化資訊泛濫，全世界都在尋找「學習」的新典範。Greeno, Collins & Resnick（1996）將認知與學習的不同觀念整理為三種主要觀點：（1）行為實徵觀點（The Behaviorist / Empiricist View）；（2）認知理性觀點（The Cognitive / Rationalist View）；（3）情境社會歷史觀點（The Situative / Pragmatics-Sociohistoric View）。行為實徵觀點的評量方式傾向以量化的觀點評量學習的成果，貼近傳統的紙筆測驗的方式；認知理性觀點評量學生能否掌握學科的普遍性原則，以及其運用策略解決問題的能力；情境社會歷史觀點強調學生主動的探索及參與的歷程（吳毓瑩，1998）。就當代藝術趨勢以言，後現代藝術重視創作與情境的關聯性。現代學習理論強調學生應作為積極建構意義的參與者，符合藝術創作強調自主性規律的特色。源於世界的知識，應是學生學習與評量的原點（陳素櫻，1997）。學生除了展示知識，更重要是在真實情境中建構知識，並展現創意及解難的能力。傳統考核偏重於知識的陳述，忽略建構知識歷程的重要性（林素微，1998）。過往，香港高級程度會考仍側重素描等技巧性的評核，未能提升學生文化素養、創意思維及自學能力等，視藝科校本評核採用能展現學生創作情境觀點的「作品集」，作為實作評量的工具，讓人期望能彌補以往的不足。

## 丙、實作評量——何謂「真實評量」中的「真實」需要？

早於 90 年代始，檔案評量模式為美國不同州的學校所採用（江雪齡，1998）。從教與學的角度，檔案評量有助教師可定時就學生的表現作出回饋，為學生作出整理、反思及修正，達至持續改進及學習歷程（鄭麗玉，2005）。特別是藝術課程更應讓學生呈現多元性的藝術表現，每個獨立的個體均有機會建構不同審美觀念、創作思維及各種媒材的運用能力（陳育淳，2005）。不同學者以不同專稱表達這些新評量模式，如「卷宗評量」（吳毓瑩，1998）；「學習歷程檔案法」（歐滄和，1998）及「近檔案評量」（李坤崇，1999）等。

不同持份者對課程中哪些是最需要「真實」評量的內容持不同的觀點。Wiggins（1990）指出教師編排教些甚麼，學生便學習甚麼，最後就只評量甚麼，這是對實作評量錯誤的理解。也有學者指出若教師的教學目標旨在訓練學生應付公開考試，這種評量也有人認為是真實評量的方式（吳毓瑩，1997）。筆者認為這同樣是錯誤的觀念，這種評量方式只能回應「考試情境」的要求，並未重視當今社會情境歷史的因素。另外，有學者指出核心能力可以是學生畢業後所能展現出來的能力（劉維琪，2010）。這種見解較為貼近情境社會歷史觀點。

學者強調當代課程改革的成功，必須在社會的脈絡中進行（吳毓瑩，1997）。若評量的目標朝向世界的真實評量方式，「課程」、「評量」與「真實應用」或「真實生活」應互相緊扣，課程內容應可應用於真實世界，或有相關連繫的事物（Linn, 1995），如以往 60 年代以現代主義及形式主義的觀念，進行創作及藝術評賞。但當今後現代主流藝術觀如概念藝術、媒體藝術、環境美學、生態美學及視覺文化都講求與創作情境的緊密聯繫，視藝科的「課程與評量」設計必須顧及這些因素。

考評局十分強調考評世界的公認性，導致評分準則傾斜於量化及僵化的性質，為了滿足考評「公認性」的「真實」需求，會否成為考評中最核心的目標？會否因而減低視藝科本質的展現？甚麼是新高中文憑試「真實」的評量目標，並導引出正確的考評或課程？這是學者對課程改革的深度觀察及爭論焦點。

## 丁、 持份者對考評改革的疑慮

台灣高中公開考試被戲稱為「一刀斃命」的高風險評量；而多元評量的教育改革，也被負面地稱為「凌遲致死」（吳毓瑩、吳麗君，2002）。就本土情境而言，學者及教師一方面認同改革的精神，另一方面對考評的方式極為疑慮。產生這種矛盾現象可歸納為四種不同的意見：（1）作品集呈交的方法影響評分；（2）依據「成就描述」的藝術評賞評核方法；（3）文字在評核中佔據過重的角色；（4）藝術創作與藝術評賞緊扣相連的考核及評分安排。

### 一、作品集呈交方法影響評分效度

就視藝科而言，創作的檔案是展現個人藝術能力的最簡易的途徑。Valencia & Calfee 提出檔案可以分為三種模式：展示型檔案（showcase portfolio）、文件型檔案

（documentation portfolio）及評鑑型檔案（evaluation portfolio）（鄒慧英，2000）。當中評鑑型檔案屬於標準化的型式，主要功能與傳統客觀式測驗有相近的地方，檔案評分的範圍已經事先決定，學生主導權相對較低。考評局採用的屬評鑑型檔案，因學生需回應評分的量度準則，創作的思維受到限制，但學生仍有空間主導整個創作歷程，而爭議點在作品集呈交方法所引伸的問題。

Mehrens（1992）建議在考慮採用實作評量的效度時，應從是否藉評量方法或工具量度正確的領域、測驗內涵取樣是否適切、如何推論等問題方面考慮。大部份老師不介意負擔額外的工作，但「作品集的定義及頁數的爭議」引起極大的討論（黃素蘭，2011）。有誤傳作品集「越多及越大就越好」。相反，也有學者認為整理作品能有助清晰及簡潔展現作品集表現，如篩選、整理、表達及分享等能力，都值得學習（黃素蘭，2011）。也有不少教師支持將整件學生作品集呈交給考評局，作為檢驗學生校本評核的證據。在討論有關校本評核評分方法的研討會中，有教育局代表曾提出「不准整理作品集」，以及所有探索應在工作簿內進行的要求。有教師推測，這是為了避免學生有作弊的現象而作出的安排。

考評局要求學生每一件作品集選取 12 頁作代表（或 24 頁縮印為 12 頁），作品集要求不可被編輯。最終，每一位學生將超過 100 頁以上的作品集濃縮至 12 頁，並且以不超過 15 Mb 的 PDF 檔案呈交。這「並不連貫」的作品集選頁，如 Benjamin 所言，作為失去氛圍「壓縮影像」的印刷品（Benjamin，譯 2006），未知能否保持評量的效度。考評局所舉辦的工作坊提出被選取 12 頁的作品集，需展示「緊密發展性」的創作意念。有教師認為 12 頁的數量並未能反映學生最有價值的歷程，也很難反映彼此之間的關聯性。老師反映「作品集只交數頁，又不能整理，根本不能顯現學生作品的過程」；「完全不認同用以調分的 12+5 頁『作品集』無須經過整理，調分員也能審核考生在創作過程中的各種能力表現……調分員可能未能全面評核學生的能力，會產生不公平的現象」；「作品集應整本評核，甚至派員到校評審學生作品，如 IB 課程一般……」（《香港美術教育期刊》，2013a）。盧雪梅（1998）指出「不能為了運用上的方便或簡單的理由，把評量的層面給窄化或偏狹，評量者應配合教學目標選擇和其目的相合的評量方式和工具，以落實多元化的評量」。

筆者最擔心為了容易獲取成績，「緊密發展性的創作意念作品集」的呈交要求，無

形誘導老師以「樣式化」的創作歷程指導學生，影響課程的本意。有老師認為「學習公式化，用套路答題」（童傑，2013.4.29）。學生為了獲取高分數，最終仍是以「應試」的態度去創作。老師只按照評分準則要求的四個重點教學，而學生於作品集中公式地進行記錄及創作。創作思維應該是提升和多元的，並非一定以線性的邏輯推演主題，創造力的意識也可以是擴散性、跳躍性及其他的可能性。學者從大量有關創造力的研究中仍找不出一種必然的定律，只能找出表現創造力的不同特質。筆者擔心學生最終並未享有真正創作的自主權，而自主性正正是創造新事物的創作者必須擁有的條件。筆者也懷疑學生因只能呈交濃縮後的 PDF 檔案，對創作中強調色彩、線條或調子細緻性風格的同學不利，因檔案未能重現原貌，影響審核員（moderator）對作品判斷，進而影響分數。課程改革期望學生能提升「後設認知」，進而「終身學習」，如 Dutt-Donter & Gilman（1998）認為「學生能自我反思及有系統的闡述其信念價值」，最終學生能「學會學習」，但現在的安排是否能達到視藝科課程改革的目標及原意？

## 二、藝術評賞依據「成就描述」的評核方法

實作評量雖能配合當代的教育情境，若運用於升學考試的性質，仍面對不少挑戰。Mehrens（1992）認為實作評量要達至信度，評分者間的一致性、評分歷程的客觀性、考核內部的一致性，評分者的選擇和訓練、明確的評分規範，以及定期檢視評分者的表現等都是重要的元素。

視藝科有別於其他文憑試科目，視藝科較貼近當代文化的動向，學生跟隨當今藝術創作及評賞的模式，形成他們勇於以多樣性的藝術形式以表現他們的想法。課程也同樣趨向多樣化及動態化，並比其他科目為多。現今藝術評賞安排在文憑試中進行，文憑試要求學生在 45 分鐘的時限內，從五組（每組兩張）不同時代、國家或風格的相關主題作品中，選出一組進行評賞，這安排引起極大爭議。藝術評賞主要要求學生以「成就描述」中四個評分準則作為評論方向。而四個評分準則是於中小學課程中，採用了 20 多年費爾德曼（Feldman）的評賞模式（簡稱費曼模式）為依歸。費曼模式建構於現代主義中形式主義的美學觀，而主張形式主義的學者認為觀者能單以作品所採用的藝術形式，就能詮釋作品所要表現的訊息。此外，在「成就描述」中傾向依據量化性質的評核方法（陳國棟，2012）。

筆者及一般前線教師都十分認同藝術評賞在藝術教育的必要性及重要性。爭議點在

於現今藝術評賞評核方式，未能回應當代藝術的發展之餘，也錯誤引導學生可隨意解讀作品的態度。當代作品重視創作情境，作品形式或表達手法有可能因應創作情境，表示出簡約及只隱藏單一訊息，而重點在於創作者要藉作品反映或諷刺哪一個社會的面貌，將作品形式與作品相關背景兩者相連，才能學習到當代藝術評賞的精神，當中並不能單單以量化方式評估藝術評賞的質量。

此外，筆者認為考評要在 45 分鐘內完成過於困難，更嚴重的是在沒有賞評考核範圍及沒有提供任何背景的情況下，學生無從稽考，但為了獲取分數，只好胡亂推敲，最終以看圖作文的方式完成評賞。不少老師也同樣有相同的見解：「學生不可能對每一位藝術家有所認識，如果強迫學生去評賞，最後只會做成一個『吹水』局面。（《香港美術教育期刊》，2013b）。此外，也有老師認為「無明確範圍是其一，古今中外的作品甚至廣告，也可以出題，學生難以準備好古今中外所有藝術家的師承脈絡才去應考。」老師不諱言「學生有時只能看圖作文『吹水』」（童傑，2013.4.29）。學生也認為：「評賞筆試『只能靠估』，猶如『看圖作文』，對自己是否正確解讀創作原意並無把握」（梁子健，2012.1.11）。學者更嚴肅地指出：「更災難的是考生還要根據這個『吹水』的答案，延伸其意念至創作卷中，因此其答題的取向將直接影響考生藝術創作的取態……『胡亂虛應』成為高中視藝的創作主流。」（黎明海，2013.5.9）

明確的評分準則也可能引導了學生詮釋作品思維的方向，最終只以單一評賞結構方式進行，謝絕了學生運用其他評賞模式的可能性。教師為了針對考試要求，自然同樣依從這種由四個步驟組成的評論結構編寫評賞課程。評賞課程的設計最終難逃單一化的命運，考評雖然能達至信度的要求，但學生評賞寫作的方式，與後現代詮釋藝術的方法發展背道而馳。筆者認為藝術評賞的評核應安排在校本評核中進行，此舉有助學生就被評賞的藝術品，尋找更豐富作品的情境資料，進入更深度的詮釋。新的藝術觀念，應以新的思維作出回應。本人曾參與由考評局舉辦有關評分員的工作坊，老師即場以考評局提供的評分準則為一些學生評賞評論進行評分，目的是看看老師能否掌握以費曼模式為原則的評分規則要求，在場一位老師提出考評局解讀費曼模式的方式，與她從台灣學者所寫的論述及大學時所學習的有所不同。工作坊講員提出評分員必須以考評局提出的評核準則作為依據，經一番議論後，老師最後憤而離場。從上述的事件反映考評局在評分方式的培訓中無形左右了教師對藝術評賞的觀念，教師為了教導學生獲取分數，自然依據評分準則作為課程編制的重點，評賞課程設計呈模式化，最終局限了學生的視野及發揮。

有關當局未能就考評信度的要求與當代藝術評賞課程發展作出合理的協調，考評信度凌駕當代課程的發展。前國際藝術教育協會會長 Boughton（2005）認為後現代思潮挑戰藝術在教育的觀念。視藝科的評量需顧及質性與量性兩方面，才能明確指出教師對學生表現對藝術評賞的觀念的期待與正確的學習方向（史美瑤，2012；李坤崇，2006）。

## 三、文字在評核中佔據過重的角色

藝術評賞是首次安排在視藝科公開評核之中，文字在視藝科從未佔據如此重要的角色。多元評估沿於多元智慧的觀念，旨在證明不同的人擁有不同的智慧，單一智力的測驗未能反映人擁有不同能力的全貌。教育系統應從單一方向，以文字為主導的方向轉向多元性的考核。」Garcia & Pearson（1994）指出：「傳統評量的題目往往代表著主流文化及社會中高階層的價值觀，不利於來自弱勢文化及社會低階層的學生。故在此強調多元文化的時代，這種不公平的傳統評量已受到了強烈的批評」。教協籌委梁德賢認為：「弱勢學生最差是文字描述，他們愛創作但寫作及組織能力不一定強，結果只能有兩種選擇：一是背誦，一是放棄。」（教協報記者，2011）。教育局（2011）強調公開考試應「能有效、公平和客觀反映課程宗旨、構架、本科價值和學生能力」。文字正正並非本科價值的目標，過量的文字要求扼殺有潛質的學生的直覺、創意及想像力的發揮。教師認為：「評考模式對語文能力偏低的學生不公平，評賞部份應接受多元的評核方式，如口頭匯報」（《香港美術教育期刊》，2013a）。

Boughton 指出：「評核法的原意是給予學生機會，展示他們（學生）在美術創作途上的歷時性（performance over time）及抒發作品背後的理論架構、哲學或個人反省」（朱穎琪，1999）。若從另一個角度觀察，作品集的歷程是協助學生提升「後設認知」的能力，也是檢視學生在創作層面中「後設認知」的表現能力。筆者認為「後設認知」並非單靠文字表達，若老師或審核員能從學生完整的作品集中，觀察到無論在媒介、創作手法、藝術情境不同方面作為參考，藉視覺性的探索中，瞭解學生如何經歷「接納、變遷、解脫、到超越」的創作過程（蔡明哲，2006），文字只是擔當輔助的角色。

筆者發現老師未能將「視覺語言」及「文字」於視藝科課程擔當的角色，作出合理的安排。一方面，老師應以擴展學生「視覺創作能力」、「視覺表達能力」及「視覺素養能力」為己任。不少老師安排時間教導學生如何撰寫作品集及藝術評賞，課程中安排創作能力的訓練相應減少。筆者從文憑試擔當監考員發現，不少學生創作及繪畫能力欠

佳。此外，從探討新高中會議中，任教大專的教師也表示現今的學生不懂繪畫。作為以「視覺思維」為核心的科目，若學生將時間過量放在「文字」的要求，因而影響了創作的質量，這是值得進一步的反思。

## 四、藝術創作與藝術評賞緊扣相連的考核及評分安排

以往藝術科的公開考試以技巧為主，學生只以「畫室模式化」的繪畫方式面對考試，而未能反映後現代藝術發展的特色，就是重視情境及社會的意識。「當今『後現代社會學』不再把個人主觀認知和外在的社會群體認知全然二分，藝術的創作和表達成為不全然是個人對社會的反映，也受制於整個社會價值取向。」（陳秋瑾，1999）。

文憑試藝術創作部份佔總分 40%，評分準則分為五部份：（1）媒材及技法的選擇和運用，（2）視覺元素及設計原理的選擇和運用，（3）創作與評賞的關係，（4）創意與想像力及（5）主題傳意各佔 18%。新高中視藝考試中藝術創作必須與藝術評賞緊扣相連，評賞在沒有考核的範圍下，學生並不容易確定作品的社會及文化等背景，若創作建基於這不確定的第一因，學生如何延伸評賞作品文化及社會的維度，以及將個人的情感及想像納入為創作的元素？學生只能以猜測的態度進行創作，在不確定的第一因下，如何適當地運用其他評分項目如：視覺元素、設計原理、創意與想像力，而達至主題傳意的效果呢？

從分析發現，影響分數的並非單單「創作與評賞的關係」一項，而是不同評分準則之間彼此串聯。當學生於「創作與評賞的關係」掌握得不理想時，其他評分部份也會受到干擾。史美瑤（2012）認為採用評估表格須注意，若相關成就描述的文字過於公式化，學生只會依照所訂出的規格來創作，因而抑制了學生的創造力。曾有學者以「素描」創作為例，探討他們的創作及評賞背後的傾向，結果發現大部份的學生是以「具有共識」（獲取高分的公式）態度及目標去進行創作或鑑賞；只有極少數學生能嘗試挑戰共識，以另一種合理的角度或方式呈現答案（陳秋瑾，1997）。若「創作與評賞的關係」成為他們創作的主要條件，他們將也會按照「具有共識」的態度進行創作，就是學生只能將意念放在被評賞的作品，學生可能瞭解作品的意念，或只能是建基於懷疑之中，而非在情境之上。學生的創意未能獲得自由和自主的思想空間。學生在作品集中要把自己的創作硬性規定與藝術品評賞有聯繫，實在限制了學生的創意及發揮。

## 戊、 總結

一般人認為學生的學習與滿意程度均由老師負起全部的責任。這種歸因的邏輯令教師承受不公平的看法。學者對這現象提出警告和呼籲，實作評量的推展並不能單建立在信念上，而是要建立在實際的證據上（Linn, Bake & Dunbar, 1991）。這次大規模的教育改革，評量成效的關注層面，並非只是學生成績的個人層次；檢視「評量的機制」，檢視學生的學習成果是否達成預期設定的目標？如何進行改善或修正也應作為考量之一（劉維琪，2010）。香港連續三年被選為全球化指數排名榜首，學者提出「情境社會歷史觀點」最能回應當今全球化的社會情境。在當代藝術的觀念中，藝術創作重視創作者個人經驗與情境互動為主，藝術評賞則重視藝術品的客觀情境，然而，文憑試的要求卻剛剛相反。考評制度出現扭曲的現象，但教師為了讓學生獲取分數，只好以「應試模式」編寫校本課程，故考評制度具有對視藝科課程潛在的影響性，干擾教師課程設計方向，以下提出四方面作出回應：

1. Educational Testing Service（1990）的報告指出，重新設計實作評量的方案相對現有測驗模式昂貴十倍以上。以實作評量（作品集）作為考核，必須考慮有否足夠的經費持續運作這系統。考評局應提升運作的經費，來確保調分員能清晰及完整地了解學生作品集的歷程及質量。
2. 依據現代主義費曼模式所建構的「成就描述」已經過時，應建立一種能回應當代藝術文化的藝術評賞評分框架，讓學生能脫離單一的評賞模式，擴展學生的視覺素養，而藝術評賞應安排於校本評核中進行。
3. 文字在評核中應只擔當輔助角色。考評局應提供正確的範例，並釐清視覺表達及創作能力才是中學階段課程的核心。
4. 藝術評賞與創作的必然聯繫，只會扼殺學生的創意及創作的自主性，必須廢除。

兆基創意書院校監黃英琦指出，「藝術科目在舊制下雖是冷門，但現時是『令冷門的更冷門』」；「我曾見過有學生很有興趣和天分，也因為考試而放棄藝術，令人感到很殘酷」（童傑，2013.4.29）。視藝科考評及課程的「真實」需要是甚麼？是「以制度為本」的運作考量？還是「以人為本」？還是為「香港創意人才培育」為主要考量？2012 年台灣舉行的「SGHC 全球化人力資本高峰會」，提出兩項重要的觀念：「如何避

免扼殺創意的事件發生」及「瞭解如何創造更有創意的人力」（Haren，2012）。「如何避免扼殺創意的事件發生」是兩屆視藝科文憑試後，值得進一步探討的重要議題。

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# *Potential impact of the assessment structure of the NSS Visual Arts on the curriculum*

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## Abstract

This article tries to link up the discussion on the topic of "the assessment structure" and "the outcome phenomenon" to evaluate and reflect the impact caused by NSS Visual Arts public examination. In the process of investigation, there are 4 aspects in the assessment structure of NSS Visual Arts Education public examination which are liable to influence the NSS Visual Arts Curriculum.

They are classified as follows:
1. The ways of submitting students' portfolios
2. The assessment ways of "rubrics"
3. The role of "Statement and Words" in the assessment
4. The assessment arrangement of "Art Appreciation"

In summary, the evaluation of the complete assessment structure and the cognition of how students can achieve their learning targets should be the core items of detecting the true effect and result of the NSS Visual Arts Assessment Structure.

## Keywords

assessment structure, rubrics, art appreciation

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# 新高中應用學習之反思與檢討

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## 摘要

應用學習是香港新高中新設的組成部分，修讀學生能根據本身之性向與能力自由選擇，透過實際操作來掌握不同技能，其設計體現了「學生中心」、「體驗學習」、「共通能力」等教改目標，然而文獻對有關課程教師之專業感知卻少有探討。為此，本文通過實證研究搜集了第一手資料，彌補相關研究缺口，以助學界檢討與反思。

本文屬質性研究，筆者邀得八名應用學習科目教師參與，環繞課程設計、成效評估、推行困難等作深度訪談，結果顯示教師普遍認同應用學習能激發學生學習動機，滿足就業及職業導向的升學需要，而課程局限則在於財政資源、人手調撥及行政安排等三方面。

## 關鍵詞

新高中課程，應用學習，職業導向課程

## 甲、背景

2005 年，教育統籌局（現教育局）發佈《高中及高等教育新學制 ── 投資香港未來的行動方案》文件，正式確立新高中課程的定位與功能。作為面向未來的教育規劃，文件中提出了不少創新的課程改革，例如通識教育科被列為升讀大學的必修科、各式校本評核、以及開設多達二十門選修科供高中生選讀。選修學科中，應用學習（Applied Learning, ApL）的課程可說是最能體現新高中精神的學科之一。由於應用學習下的學習

範疇極為彈性，學生能根據本身之性向與能力自由選擇，透過實際操作來掌握不同技能，正正回應了教改提出「學生為中心」、「體驗式學習」及「發展學生共通能力」等範式轉移的新教學模式（教育統籌局，2005）。

教育局課程文件之設計希望迎合社會與學生所需，然而任何教育政策亦需要前線教育工作者的配合。正如著名學者 Andy Hargreaves 所言，任何學校變革政策與實踐中，教師也是改革理念與學生學習改進的關鍵（Hargreaves, 1994, p.7），只有教師認同政策的積極意義，才能發揮政策的效用。故此，如要檢討新高中應用學習之實際功效，了解新高中教師之專業感知必不可少。那麼在政府與公眾的影響下，接觸學生及統籌課程的前線教師對應用學習又抱有甚麼看法？鑑於新高中課程推出時間不多，相關議題的檢討仍未算全面，故此筆者希望通過是次研究，為應用學習的討論提供前線教師之真實意見，以作學界檢討與反思之用。

# 乙、文獻回顧

## 一、應用學習的定位與目標

應用學習課程是新高中課程的新設選修科目之一，與其他新高中學科不同的是，其方向並非以升學作唯一目標。應用學習之設立可視為對 2005 年的教改文件《高中及高等教育新學制 — 投資香港未來的行動方案》的回應，其目的是讓學生「透過真實情境，讓學生從應用和實踐中學習有關的知識和理論，從而培養他們的共通能力。」（教育統籌局，2006，頁 1）。2009 年的《應用學習課程及評估指引（高中課程）》則進一步，把課程目標擴展至協助學生「探討和了解就業及終身學習的取向」（課程發展議會與香港考試及評核局，2009，頁 1）。明顯地，應用學習配合着 2005 年教改文件所提倡，「學生為中心的教學模式」、「體驗式學習」及「發展學生共通能力」等教改目標，亦希望為學生提供主流升學以外的機會。

課程設置方面，應用學習共有六個學習範疇，分別為（1）創意學習；（2）媒體及傳意；（3）商業、管理及法律；（4）服務；（5）應用科學；和（6）工程及生產（課程發展處，2010，頁 27）。學生最多可選修兩門，每門課程的總課時為 180 小時。截至 2013/14 年度，共有三十七門課程獲教育局官方認可（見附錄）。可見，應用學習的學習範疇範圍頗廣泛，與就業市場亦有密切關係。

教與學方面，考慮到一般學校未必能對職業導向學科有相應支援，教育局建議學校以兩種模式推行應用學習，包括：

*(1) 課程主要於課程提供機構的場地進行，並由該機構的導師教授。學校須按課程提供機構的時間表，主要安排學生於星期三及星期六外出上課；*

*(2) 課程主要於學校進行，並由學校教師聯同課程提供機構的導師一起負責課堂的安排。學校須與課程提供機構訂定施行細節，包括如何分配教學工作量、調配場地及設施、提供課堂支援等。*

（課程發展處，2010，頁 5、7）

《教育局通函第 14/2013 號》則對課程提供機構及學校的關係進一步說明：

*推行應用學習的學校，可考慮利用課程提供機構提供的指引和支援，先讓校內教師承擔較多的教學工作，繼而演變為由課程提供機構授權學校開辦課程，但授課及評核部分的內部質素保證，則仍然由課程提供機構負責。*

（教育局，2013，頁 3）

評核方面，應用學習的評核由課程提供機構進行，卻不是以五個等級指標顯示學生成績，只設「達標」（Attained）和「達標並表現優異」（Attained with Distinction）兩級。「達標並表現優異」者等同於甲類科目的第 3 級或以上（課程發展議會、香港考試及評核局，2009）。評核雖由課程提供機構負責，然而最終評級將由香港考試及評核局參考評核準則和成就標準來調整（課程發展議會、香港考試及評核局，2009）。

從上可見，學校與教師在應用學習的角色與傳統學科極為不同。教師雖參與程設計與編排，卻不主導教學與評核事宜，更多是作為聯絡橋樑，擔任協調者，以至行管理者的輔助角色。然而，如何確保教師對課程提供機構的教學成效與評估有足夠信任，讓兩者合作無間？官方文件卻少有提及。

## 二、職業導向課程的不同觀點

應用學習雖有升學功能，但它幫助學生銜接勞工市場的目標亦是顯而易見。《應用學習課程及評估指引（高中課程）》中表示，應用學習的前身為職業導向教育，學習內

容與「廣闊的專業和職業領域相關連」，以「加深（學生）對各行各業的認識。藉着了解專業領域內的知識、技能和職場要求，學生得以訂立就業的方向」為目標（課程發展議會、香港考試及評核局，2009，1.2-1.4）。一般而言，職業導向課程的學生成本較文法中學的高，可是社會、教育學者及家長對職業導向的畢業生並不特別關注，甚至抱有負面看法。不少教育社會學的學者認為，這是因為職業導向課程的社會地位，以及職業導向社會教化功能與一般課程不同所致。

社會地位方面，Fisher（1967）聚焦於職業教育的歷史脈絡，指出它源於中世紀的手工培訓，其時手工培訓經常被視作讓罪犯補救過失和罪過的方法之一，故此手工培訓多與罪犯改造相關聯。澳洲學者 Phillip Hughes 則着眼於制度與文化，指出中國自有科舉以來便實施精英教育，教育機會只對少數官僚或富裕階層有限開放。由於教育普及率長期極低，致使中國社會形成鄙薄勞動，輕視實踐的傳統文化觀（Hughes, 2005）；相對而言，美國社會學家 Collins（1998）則聚焦於職業教育的社會地位流動功能。Collins 認為學生不能以手工勞動培訓提高社會地位，融入、以至帶領中產階級文化，是職業教育注定不及文法中學受歡迎的主因。綜上可見，雖然各派學者對職業教育有不同見解，但三者均認同社會對職業教育的偏見一直存在，並延續至今。乃至現時放棄文法中學，接受職業導向課程者，不論就讀甚麼科目，行動本身已有負面標籤（Hughes, 2005），這亦成為中學發展職業教育的一大障礙。

除了社會與文化原因外，教育界對職業導向課程的教育及社會教化功能亦頗有異議，如 Rury 便指出不少傳統教育領導者對職業教育存在敵意，皆因他們認為職業教育破壞教育的社會化功能及培養公民的理想，忽略傳播社會與道德責任（Rury, 1991）。而更重要的是，以實務而非知識為主的課程會影響他們領導教育發展的地位，故此他們傾向優化傳統教育，或發展共通能力為主的博雅教育（Liberal Art Education），而反對在與傳統課程不相關的科目上進行無用的訓練（Cremin, 1961; Rury, 1991）；前線教師方面，部份教師亦質疑職業教育的教學成效。例如黎萬紅及盧乃桂在 1997 至 2000 年間於內地進行的質性研究顯示，不少教師認為職業教育畢業生所掌握的技能不足以應付瞬間萬變的社會發展，而基礎能力不足又會影響他們終身學習，故他們對職業教育抱懷疑態度（黎萬紅、盧乃桂，2003）。

雖然社會與教育界對職業教育不盡支持，但 Collins（1998）則認為，職業教育在

僱主心目中始終有其價值存在。一般學校系統強調角色學習、出席紀錄，以及大量教育學生的效率原則，升學是按年齡，而非學習成績為標準，而考試往往抽離現實，未能回應僱主需要，為社會提供合適人才。相對地，職業教育結合理論與實踐，正正能補足這方面主流學制之不足。

綜上可見，官方、公眾、僱主、教育界等持份者對職業教育的立場不盡相同。鑑於過去文獻對職業教育多着重宏觀社會分析，少有針對應用學習前線教師的個人感知，為此，筆者希望透過本研究，了解前線應用學習教師對此課程的看法、課程推行的挑戰及建議。

## 丙、研究方法

為了令本研究更為聚焦，本研究將環繞以下問題進行討論：

（1）應用學習對修讀學生有何影響？
（2）教師如何看待應用學習的升學功能？
（3）教師如何看待應用學習的就業功能？
（4）教師推行應用學習時面對甚麼困難？

本研究屬半結構性訪談（semi-structured interview）。Bogdan & Bilken（2007）指出半結構性題目雖未讓受訪者完全主導過程，卻能讓研究者與受訪者雙方更聚焦於研究議題之上，又能提供空間予受訪者自由地表達個人想法和經驗。為此，本訪談以上述四條問題為引導，並緊隨着與受訪者個人認知及教學經驗相關的開放性問題，用以了解受訪者感受，並在議題聚焦與受訪者主導間作一平衡。此外，本研究亦輔以與應用學習之相關報導作比較分析，以期與訪談結果互相印證，確保資料與研究結果之效度。

本研究邀請了八名任教新高中課程，曾帶領應用學習一年或以上的教師作深度訪談，其中任教於第一組別學校者有兩位、第二及第三組別學校者各有三位。由於應用學習由 2010/11 學年推行至今仍不滿三年，故本研究未有資深教師作比較。本研究採用便利取樣法（convenience sampling），根據受訪者的可行性和意願來邀請研究對象。部份學者認為選擇便利取樣的研究者無法確保受訪者的代表性，選取對象亦受到研究者個人偏見影響（Gravetter & Lori-Ann, 2012），然而對比其他取樣方法，便利抽樣能保證研究者和受訪者之間有較佳的關係與信任，有助取得更深層資訊，這對揭露一些涉及個人

真實想法、或須對學校政策或措施作批判性建議等的質性研究議題最為合適（Gravetter & Lori-Ann, 2012; Maxwell, 2005）。

基於研究道德之考慮，本文將以代號「教師 A 至 H」代替受訪教師的身份，以作闡述。信度方面，本研究的目的並非找出所有教師的共同觀點，而是希望透過新高中教師之質性訪談，為新高中應用學習的議題提供藉得討論的可能性，供未來的課程設計者參考及優化課程之用。基於便利取樣法所限，本研究的發現與討論不能推論至所有教師，而只能反映部份教師根據自身經驗所歸納的個人觀感。

# 丁、結果與討論

總體而言，本研究的受訪教師均肯定應用學習的積極作用，然而在不同學校脈絡中，教師對應用學習的看法卻稍有不同，亦提出了前線教師所面對的不同挑戰。綜合而言，教師意見可循（1）學習動機方面；（2）升學方面；以及（3）就業方面以作探討。

## 一、學習動機方面

由於選修應用學習的學生根據各自興趣、性向及能力選取與其相符的課程，其學習動機被假設會較一般課程為高（課程發展議會、香港考試及評核局，2009）。本研究的訪談亦印證了這點：

> *「……應用學習的考核不是評分和評級，而是項目能否完成……參加 ApL 的學生更有滿足感，以往上課漫無目的，現在卻很清楚自己方向，因為能學到「實際的東西」，好像怎樣梳出某種髮型，怎樣因應不同場合來控制化妝深淺（度）等，這些都可以在生活中應用出來。」*（教師 B）

> *「……有些學生為了自己的（珠寶）設計廢寢忘餐，假期仍經常回到視藝室找參考書。」*（教師 D）

> *「……修讀了 ApL 的學生現在上課沒那麼害羞了。因為他們在校外實習時經常與不同人等合作，也要向客戶展示成果……他們的自信和表達能力都增加了，思考更靈活……」*（教師 F）

本研究中，受訪教師普遍認同應用學習能有效激發學生的學習動機，主要原因在於它的學習內容具體而貼近學生生活，在現實中有應用機會；其次則為學習與考核形式的

改變，培養了學生溝通、協作、解難、自我管理等重要的共通能力，而該些應用學習科目培養出來的能力，亦反過來幫助學生投入學校日常課堂，形成良性循環。

應用學習除了提升學生學習動機及共通能力外，某程度上亦能舒緩師生緊張關係。教師 C 在訪談中表示：

> *「……以往不喜歡讀書的學生，等到十五歲便能離開學校找工作了。可是自教育局推行十二年免費教育後，這些學生被迫『困』在學校至十七八歲。對他們而言，應用學習既滿足他們的興趣，又能減少教師處理主流課程中學生個別差異的困擾，這是教師與學生的雙贏模式。」*（教師 C）

教師 C 視應用學習為學生提供了非主流學習機會，是解決「課堂學習差異」的方法之一。儘管此觀點以教師為中心，亦非應用學習的設立原意，但它卻從側面證明，應用學習對其他學科學習，以及建立積極的課堂氣氛有着正面作用。

## 二、升學方面

課程發展處對應用學習的升學安排着墨不多，只着學校建立「升學及就業輔導支援機制」，以及「為學生提供充足的資訊及指引」（課程發展處，2010，頁 10）。考評局助理總經理（評核發展）傅德華進一步表示，若應用學習的選修科目，與大學選修科或與專門行業有關，如時裝設計等，相信會獲優先考慮（《星島日報》，2010.8.13）。然而，考評局的答覆，似乎未能釋除家長與學界疑慮，畢竟官方文件中學校只擔當提供資訊的輔助角色。社會普遍認為應用學習的評級過於模糊，亦未必有助於升學。例如有家長曾表示，應用學習的評級由舉辦課程機構負責，並無劃一標準，未必公平客觀，更難獲海外機構承認（《東方日報》，2010.8.13）。部份教師更直接把選讀應用學習科目人數不足，歸咎於它的評級無助於升學。例如，教評會副主席許為天便表示應用學習未受學界與社會認可，因現時八大院校大部分只視應用學習成績為額外參考資料，其成績既沒列入資歷架構，亦不算作大學學分，令學生「兩頭不是岸」（《東方日報》，2011.1.17）。

相對於社會各界的質疑，本研究的受訪者基本上亦持相似意見，例如，教師 A 在訪談中對應用學習的升學效能便不表樂觀：

> *「……既選讀 ApL，就不要太在意是否廣泛認受，因為有能力修讀學術科目*

*的都不會選它，你不會為了興趣，放棄物理去讀美容化妝吧……倒是毅進課程把 ApL 視作（香港中學文憑）合格科目之一。」*（教師 A）

教師 E 及 F 亦認為應用學習對主流升學幫助不大：

*「……大學是計算等級的。升讀大學的話，以往操練舊試卷主導的傳統學科才是正途。有部份大學甚至說只有考生在其他學科成績相若時才考慮 ApL 成績。既是這樣，我怎樣鼓勵學生修讀 ApL 呢？」*（教師 E）

*「……升大學都是看實力，我比你高一分，ApL 零分我也贏了。」*（教師 F）

雖然不算很明顯，但教師 A 對選修應用學習的學生頗有偏見，頗有「職業教育屬能力低下者修讀」的負面標籤，而受訪者亦普遍認為應用學習未必有助學生入讀大學。可是，如果修讀學生的升學目標並非主流大學，教師的態度便較為開放：

*「……我會鼓勵跟不上主流課程的學生修讀美容、化妝等 ApL 課程……那邊的升學機會比會考更高。」*（教師 A）

*「……ApL 有酒店管理等科目，為學生提供基礎理論與實踐經驗，對他們銜接讀毅進及其他專上學院的課程很有幫助。」*（教師 E）

從上可見，教師們認為選修應用學習課程並非缺少升學機會，如學生以專上學院的副學士、高級文憑等職業導向課程為目標，則其升學機會比修讀傳統學科者更高。此外與一般社會印象不同的是，雖然應用學習課程的成績評估由舉辦課程機構負責，但受訪教師未有質疑校外評估的準確性，亦普遍肯定應用學習的教育效能。

### 三、就業方面

應用學習課程之職業導向色彩極為濃厚。誠如課程發展處所言：「每個應用學習課程均建基於不同行業或工業，以反映香港在社會、經濟和科技需求等方面的發展及環球趨勢」（課程發展處，2010，頁 6）。學校實施時，除了職業相關的導引課程外，課程發展處亦鼓勵學校安排職業講座、探訪活動及與職業相關的學習經歷，以幫助新高中畢業生銜接就業市場。

然而，由於新高中學制推行不久，僱主對修讀應用學習課程的學生信心未算充足。例如有酒店業僱主便表示，與修讀職業訓練局酒店課程的學生比較，會優先考慮職訓局

的學生，因為該些課程較實用，而文憑試的評級制度則顯得混亂，僱主難以從主觀性甚高的評級了解畢業生水平（《明報》，2010.8.13）。可是本研究的訪談發現，不少教師均肯定了修讀應用學習科目的就業價值：

*「有曾任教的學生對我說，她往某連鎖化妝品店見工時，一輪面試後便獲聘了。因為她在 ApL 中受過美容訓練，面試時比其他未受訓練的求職者更有信心，又具備相關知識基礎。」*（教師 B）

*「……我們有修讀珠寶設計的學生……她之前讀書是很差的，畢業後不但在藝墟設立攤位，更成立網店售賣自己設計的首飾，總算有一技之長。」*（教師 F）

由此可見，受訪教師認為曾修讀應用學習課程的學生憑藉在學時期的工作經驗，面試時比其他求職者更有信心，有助他們銜接就業市場或自行創業。不過，部份教師則表示能力稍遜學生選修兩門應用學習科目，課業負擔可能過重，如專注於其中一門，通曉一技之長可能較佳。

另外值得注意的是，訪談者亦談及應用學習課程偏重職業導向的隱憂：

*「大部份（學生選擇的）應用學習課程，不是航空，就是酒店、多媒體……如果經濟環境一變，他們能不能靠這一技之長生活呢？」*（教師 G）

儘管應用學習以提供多元化課程為目的（課程發展議會、香港考試及評核局，2009，2.1），可是職業導向課程始終受到市場，即僱主需求與學生興趣所主導而集中於某些項目，如航空工程、酒店服務等。長此下去，確實有可能逐漸集中於單一類別的課程範疇，有違課程多元化的初衷。而本研究中教師的憂慮，亦呼應了文獻回顧部份內地教師對職業教育畢業生的適應能力之懷疑。

## 戊、學校推動應用學習之挑戰

儘管本研究的受訪教師在不同程度上均肯定應用學習對學生的正面影響，然而他們亦指出了推行應用學習時學校與教師所面對的困難。如上所言，職業導向的應用學習課程所需資源比一般課程較多，故此學校資源問題一直是社會與教育界的共同關注焦點。

財政資源方面，教評會副主席許為天在應用學習推出之初，便指出教育局只資助學校 75% 費用並不足夠（《東方日報》，2011.1.17），教育局隨後於〈教育局通函第 14/2013 號〉承諾給予每校首十名選修生全額資助，其後每名學生津貼額為平均課程費用的 75%（上限 8,330 元）。然而學校或因資源所限而限制部份課程人數，令一些學生未能完全根據性向與興趣選科就讀。

相對社會人士的關注焦點，教師之着眼點較多聚焦於人力資源及課時運用之上：

*「……新高中課程又有 IES（獨立專題探究），又有 OLE（其他學習經歷），全都是必修，而我們這些負責應用學習課程的教師都是兼教的，又要準備課程，又要聯絡校外機構，又要商討合作細節。這麼多行政事項，我們哪有時間精力處理？」*（教師 E）

*「……我們根本沒有時間完成課程，經常要學生星期六，甚至長假期回來額外補課，可是應用學習的學生卻都在星期六上課，很難為他們安排第二次補課……」*（教師 D）

*「……大部份（高中）老師都去了操練 past paper……（新高中）課程時間緊迫，學校會先處理學術科目，其他興趣性的發展，相對容易放手。」*（教師 H）

從上可見，時間與人力資源是教師發展應用學習的兩大局限。新高中所面對的公開考試壓力和其他課程改革所帶來的工作量，往往令相關教師無力兼顧應用學習課程的統籌發展，而選修學生在核心課程的學習進度亦可能受到影響。至於校方投放多少人力資源於應用學習課程，很大程度上視乎學校領導對課程的重視程度，教師角色頗為被動。

## 己、總結

本研究發現，新高中教師普遍認為應用學習有助學生就業及提升學習動機。教師對應用學習的升學功能略有保留，可是如升學目標並非主流大學，而是職業為導向的專上課程，則教師認為應用學習有助學生銜接專上教育。

對學校與教師而言，推行應用學習的主要局限在於財政資源、人手調撥及課程安排三方面：（1）有限的財政資助局限了部份應用學習課程的收生人數；（2）應用學習為新高中教師帶來不少非教學的行政工作，加重高中教師壓力；（3）部份應用課程須與

校外機構合作，未必能遷就學校的主流課程進度或補課安排，降低了教師調節課程進度的靈活程度。

總括而言，本研究的受訪教師均認同應用學習對學生學習動機、升學、就業等方面有正面影響。雖然課程實施時受到資源和人手等方面所局限，然而這些並不影響應用學習通過學生為本學習模式，促進學生性向多元發展的積極意義。然而，為了更好地達成應用學習之目標，減少學校與教師承受的壓力，筆者認為教育局可循四方面優化應用學習之實施：（1）教育方面，局方宜給予學校更充裕的財政及人力資源，讓教師享有更大的空間專注於應用學習之課程設計，並加強校外聯繫；（2）升學方面，局方宜向大專院校加強推廣，介紹應用學習的課程特色，以及應用學習評核的信效度，以利選修學生將來的升學銜接；（3）社會方面，局方宜加強推廣應用學習課程之宗旨、角色及實施情況，提升課程認受性，釋除學生、家長及社會各界對應用學習的疑慮；（4）局方可扮演學校與企業間的橋樑角色，擴大兩者的合作空間，增加選修的職業導向範疇，以配合學生的多元興趣與學習需要。

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# 附錄　應用學習的六大範疇及其選修課程表列（2013/15）

## 課程一覽表
## Course List

| 學習範疇 Area of Studies | 課程組別 Course Cluster | 科目代碼 Subject Code | 課程 註一 Course NOTE 1 | 課程提供機構-授課機構 註二 Course Provider - Course Deliverer NOTE 2 | 教學語言 Medium of Instruction | 課程費用 註三 Course Fee NOTE 3 (HK$) |
|---|---|---|---|---|---|---|
| 創意學習 Creative Studies | 1. 設計學 Design Studies | 643 | 形象設計 Image Design | VTC | 中文或英文 Chinese or English | 12,500 |
| | | 639 | 創新產品設計 Innovative Product Design | VTC | 中文或英文 Chinese or English | 11,300 |
| | | 628 | 珠寶藝術與設計 Jewellery Arts and Design | HKBU (SCE) | 中文 Chinese | 16,500 |
| | 2. 媒體藝術 Media Arts | 649 | 商業漫畫設計 Commercial Comic Art | OUHK (LiPACE) | 中文 Chinese | 10,500 |
| | | 646 | 多媒體科藝 Multimedia Entertainment Studies | VTC | 中文或英文 Chinese or English | 11,300 |
| | 3. 表演藝術 Performing Arts | 617 | 戲劇藝術入門 Introduction to Theatre Arts | HKAPA | 中文 Chinese | 14,300 |
| | | 599 | 舞出新機－舞蹈藝術 Taking a Chance on Dance | HKAPA | 中文 Chinese | 15,600 |
| 媒體及傳意 Media and Communication | 4. 電影、電視與廣播學 Films, TV and Broadcasting Studies | 609 | 電影及錄像 Film and Video Studies | VTC | 中文或英文 Chinese or English | 11,300 |
| | | 650 | 電視資訊節目製作 TV Infotainment Production | HKCT | 中文 Chinese | 10,600 |
| | 5. 媒體製作與公共關係 Media Production and Public Relations | 661 | 公關及廣告 Public Relations and Advertising | CityU (SCOPE) | 中文或英文 Chinese or English | 12,000 |
| | | 651 | 電台主持與節目製作 Radio Host and Programme Production | OUHK (LiPACE) | 中文 Chinese | 10,500 |
| 商業、管理及法律 Business, Management and Law | 6. 商業學 Business Studies | 663 | 應用商業研究 Applied Business Research | HKIT | 中文或英文 Chinese or English | 8,500 |
| | | 595 | 國際商貿市場拓展 Marketing in Global Trade | CityU (SCOPE) | 中文 Chinese | 11,500 |
| | | 664 | 實用電腦會計 Practical Computerised Accounting | HKCT | 中文或英文 Chinese or English | 11,000 |
| | | 597 | 認識金融服務 Understanding Financial Services | OUHK (LiPACE) | 中文 Chinese | 10,500 |
| | 7. 顧客服務管理 Clientele Management | 652 | 採購及營銷 Purchasing and Merchandising | VTC | 中文或英文 Chinese or English | 10,500 |
| | | 653 | 零售管理 Retail Management | HKBU (SCE) | 中文或英文 Chinese or English | 13,900 |
| | 8. 法律學 Legal Studies | 654 | 認識香港法律 Understanding Hong Kong Law | HKCT | 中文或英文 Chinese or English | 11,000 |
| 服務 Services | 9. 款待服務 Hospitality Services | 611 | 酒店服務營運# Hospitality Services in Practice# | CityU (SCOPE) | 中文或英文 Chinese or English | 12,500 |
| | | 615 | 酒店營運# Hotel Operations# | VTC | 中文或英文 Chinese or English | 12,500 |
| | | 616 | 西式食品製作 Western Cuisine | VTC | 中文或英文 Chinese or English | 12,500 |
| | 10. 項目管理 Event Management | 655 | 項目策劃及運作 Events Planning and Operation | HKCT | 中文 Chinese | 10,100 |
| | 11. 個人及社區服務 Personal and Community Services | 665 | 幼兒教育 Child Care and Education | VTC | 中文或英文 Chinese or English | 11,300 |
| | | 610 | 美容學基礎 Fundamental Cosmetology | CCHES | 中文 Chinese | 10,330 |

| 學習範疇<br>Area of Studies | 課程組別<br>Course Cluster | 科目代碼<br>Subject Code | 課程 註一<br>Course NOTE 1 | 課程提供機構-授課機構 註二<br>Course Provider - Course Deliverer NOTE 2 | 教學語言<br>Medium of Instruction | 課程費用 註三<br>Course Fee NOTE 3<br>(HK$) |
|---|---|---|---|---|---|---|
| 應用科學<br>Applied Science | 12. 醫療科學及健康護理<br>Medical Science and Health Care | 592 | 中醫藥學基礎<br>Foundation in Chinese Medicine | HKU (SPACE) | 中文（普通話）<br>Chinese (Putonghua) | 13,000 |
| | | 656 | 基礎健康護理#<br>Fundamental Health Care# | OUHK (LiPACE) | 中文<br>Chinese | 10,500 |
| | | 618 | 健康護理實務#<br>Health Care Practice# | CCHES | 中文或英文<br>Chinese or English | 11,130 |
| | | 660 | 醫務化驗科學<br>Medical Laboratory Science | HKU (SPACE) | 中文或英文<br>Chinese or English | 12,500 |
| | 13. 心理學<br>Psychology | 662 | 應用心理學#<br>Applied Psychology# | LIFE | 中文或英文<br>Chinese or English | 12,000 |
| | | 666 | 探索心理學#<br>Exploring Psychology# | HKBU (SCE) | 中文或英文<br>Chinese or English | 13,500 |
| | 14. 運動<br>Sports | 627 | 運動科學及體適能<br>Exercise Science and Health Fitness | HKBU (SCE) | 中文<br>Chinese | 16,500 |
| 工程及生產<br>Engineering and Production | 15. 土木及機械工程<br>Civil and Mechanical Engineering | 624 | 汽車科技<br>Automotive Technology | CCHES | 中文或英文<br>Chinese or English | 11,500 |
| | | 659 | 環境工程<br>Environmental Engineering | HKU (SPACE) | 中文或英文<br>Chinese or English | 12,500 |
| | 16. 資訊工程<br>Information Engineering | 667 | 流動及網上程式開發<br>Mobile and Online Apps Development | HKU (SPACE) | 中文或英文<br>Chinese or English | 13,000 |
| | 17. 服務工程<br>Services Engineering | 640 | 航空學<br>Aviation Studies | HKU (SPACE) | 中文或英文<br>Chinese or English | 13,000 |
| | | 657 | 屋宇設施工程<br>Building Facilities Engineering | VTC | 中文或英文<br>Chinese or English | 11,300 |
| | | 658 | 電子產品設計實務<br>Electronic Product Design in Action | VTC | 中文或英文<br>Chinese or English | 10,100 |

**註一 NOTE 1**

學生在同一個課程組別內只可修讀**一科**有「#」的課程。

For courses marked with "**#**", only **ONE** course in the course cluster could be taken by students.

**註二 NOTE 2**

| 課程提供機構－授課機構 Course Provider - Course Deliverer | |
|---|---|
| CCHES | 明愛社區及高等教育服務　Caritas Community & Higher Education Service |
| CityU(SCOPE) | 香港城市大學專業進修學院　School of Continuing and Professional Education, City University of Hong Kong |
| HKAPA | 香港演藝學院　The Hong Kong Academy for Performing Arts |
| HKBU(SCE) | 香港浸會大學持續教育學院　School of Continuing Education, Hong Kong Baptist University |
| HKCT | 香港專業進修學校　Hong Kong College of Technology |
| HKIT | 香港科技專上書院　Hong Kong Institute of Technology |
| HKU(SPACE) | 香港大學專業進修學院　School of Professional and Continuing Education, The University of Hong Kong |
| LIFE | 嶺南大學持續進修學院 Lingnan Institute of Further Education |
| OUHK(LiPACE) | 香港公開大學李嘉誠專業進修學院 Li Ka Shing Institute of Professional and Continuing Education, The Open University of Hong Kong |
| VTC | 職業訓練局　Vocational Training Council |

**註三 NOTE 3**

所有在資助中學、官立中學、按位津貼中學、直接資助計劃的中學及設有高中班級的特殊學校修讀由課程發展議會所建議之高中課程的學生，將獲教育局及學校全數資助課程費用。

All students in aided, government and caput secondary schools, as well as secondary schools under the Direct Subsidy Scheme and special schools with senior secondary classes following the senior secondary curriculum recommended by the Curriculum Development Council will be fully subsidised by the Education Bureau and schools to take Applied Learning courses.

( 資料來源 : http://applications.edb.gov.hk/circular/upload/EDBCM/EDBCM13014C.pdf 〈教育局通函第 14/2013 號〉頁 6-7)

# *Review of Applied Learning in NSS curriculum*

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## Abstract

Applied Learning (ApL) is a new component of the NSS curriculum, which responded to the paradigm shift of "student-oriented", "experiential learning" and "development of generic skills" in the education reform. In ApL, students can choose their elective subjects according to their own interest and equip with different vocational skills through block practice. However, there is no comprehensive study on the teachers' perception of ApL implementation. This empirical study, therefore, is intended to fill this research gap and can serve as a platform for further discussion.

This study adopts a qualitative approach. The data was collected from the in-depth interview with eight ApL teachers, which focused on the teachers' perception of curriculum design, effectiveness evaluation and challenges faced in ApL implementation. The findings revealed that the teachers agree the ApL curriculum can boost the student motivation and prepare students for further study in vocational training or for future employment. Nevertheless, the three main challenges encountered including insufficient financial resource, lacking manpower deployment and complex curriculum administrative arrangement limited the effectiveness of ApL implementation.

## Keywords

NSS curriculum, Applied Learning, vocational education

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# *How much can we trust test scores?*

**Kay Cheng SOH**

*Singapore*

## Abstract

Assessment plays a critical role in students' lives. Due to the relative nature of educational measures, test results may be highly fallible and cannot be treated as if they are error-free. This paper illustrates several ways in which test scores can be misinterpreted thus leading to no small consequences on students, and how to get around them.

## Keywords

assessment, examination, interpretation of test scores, score transformation, score reliability

> *"The reliability of our national assessments is simply not good enough to warrant the trust that is placed in them. And one day, people are going to find this out."*

The above quote from Dylan Wiliam (2000) comments on the British examination systems. Hong Kong and Singapore, both being ex-colonies, have inherited some elements of the British education system with much emphasis on examinations. Added to this is the historical influence of the Chinese imperial selection examination and the culture of valuing education as a mean to social upward mobility. A question that can be asked is whether Wiliam's comment applies to Hong Kong and Singapore, or even East Asian nations like Japan, Korea, and Taiwan where much emphasis and a lot of premium have been placed on test scores, especially for administrative purposes such as selection, channeling, and certification. Naturally, test scores are taken very seriously by school administrators, teachers, and parents alike because employers and the public are doing the same. The questions arising from this situation are: Are we too serious about test scores? Should we not take them with a pinch of salt?

With these questions in mind, this paper tries to put examination and test scores in the

current context of teaching and assessment. It also suggests six axioms following which teachers can more appropriately interpret test scores and use them more cautiously to help in guiding students' learning.

## Assessment *of* and *for* learning

In recent years, there has been much discussion on *assessment of learning* versus *assessment for learning*. The two approaches to assessment have different purposes, function, and procedures (Australian Education Services, n.d.). The emphasis on assessment *for* learning is a fairly new phenomenon in education as compared with the traditional focus on assessment *of* learning.

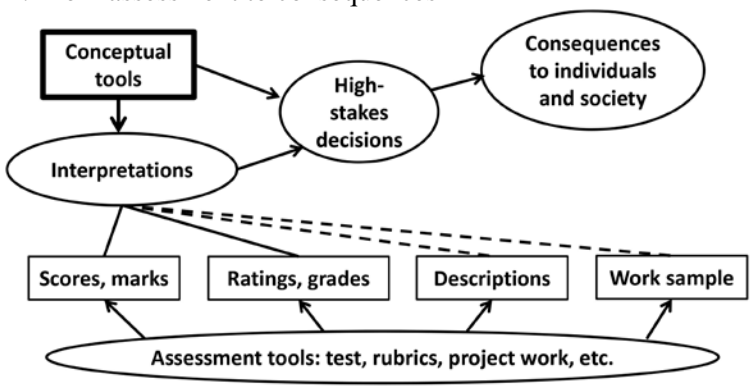
Assessments often yield results test scores or grades which are supposed to indicate students' learning – both achievement and difficulties. Information encoded in test scores tells about students' learning after instruction is summative in nature. When scores are used for making decisions which have long-ranging effects on the students' future educational opportunities, they are said to be high-stakes in nature. In this sense, this is *assessment of learning* which is by tradition almost the only purpose of examinations. Assessment is summative and retrospective, and is a measure of the *product* of learning. It can also provide information about the students' learning as a *process*. When looked at this way, the information tells where learning has taken place and where corrective instruction by teachers and further efforts by students are needed. Through this latter practice of *assessment for learning*, assessment outcomes are used diagnostically and dynamically to guide further instruction and learning. Its nature is therefore formative and forward-looking.

Although distinction can be made between summative assessment (*of* learning) and formative assessment (*for* learning), the fact is that from gathering assessment data to using the data is a long process and its impact can take a long time to actualize (Figure 1). Take for example, students are assessed by teachers using assessment tools such as tests, rubrics, projects, etc. Assessment outcomes are encoded and recorded as scores, marks, ratings, grades, descriptions, and work samples and labeled with descriptors such as *excellenct, good, etc*. by teachers using some conceptual tools (e.g., average, passing marks, acceptable grades). Some of the decisions are formative and useful for guiding further instruction and learning. Others are summative and associated with high-stakes "standards" for channeling, streaming, or tracking – basically, grouping pupils for further instruction.

This long process (Figure 1) may happen within a year, as in school-based examinations for re-organizing students at the next higher class level. It may continue for a few years, as in the cases of the Primary School Leaving Examination (PSLE) in Singapore or Diploma in Secondary Education (DSE) examination in Hong Kong. It does

not really matter whether one or more years are needed, as the process and its effects on pupils are similar or even the same.

Figure 1: From assessment to consequences




Test scores are used for decision-making. First, assessment of learning is high-stakes in nature and has long-term, irreversible consequences. Secondly, assessment for learning is for facilitating learning. In between the gathering of assessment outcomes and decision-making, there are several intervening steps. If the conceptual tools are not available to test score users (i.e. teachers, school administrators, curriculum developers) and the interpretation is improper, decisions will be irrelevant or even misleading. These mean a waste of resources in terms of time and efforts of both teachers and students. Test scores therefore should be cautiously interpreted, and statistical concepts are important assessment tools for this purpose.

If learning is seen as a continuous, long journey through the educational highway from primary school to university, then end-of-year school examinations and end-of-stage examinations (such as the PSLE or the DSE examination) are used not only retrospectively to sum up what has taken place but can also act predictors and guides for further learning. In a broader sense, the dual function of assessment can break down the distinction between formative and summative assessments. One can go even further to doubt whether assessment at the end of each school year and each schooling stage is really summative or formative. With these concerns in mind, the six axioms are proposed below for enhancing the proper interpretation and use of assessment outcomes:

1. A score standing alone has no meaning.
2. Same scores may have different meanings.
3. A small difference makes no difference.
4. Weights may be non-functioning.
5. Assessors may be unreliable.
6. When interpreting test scores, be humble and flexible.

# Axiom no. 1: A score standing alone has no meaning

When Albert scores 75 for his English assessment, what does this mean? Several interpretations readily come to mind:

1. *He is far above the passing mark of 50; he has done well.*
2. *He is far below the perfect mark of 100; he has done poorly.*

The same mark leads to two different views because of two different expectations. If more information is available, interpretations will change:

3. *The class mean is 75; Albert is average.*
4. *Albert's score is 30 marks higher than the class's lowest score of 45; well done.*
5. *Albert's score is 5 marks lower than the class's highest score of 80; could have done better.*

If the teacher has set a criterion score of, say, 70 (based on some reasonable grounds or past experience), then:

6. *Albert has passed the test.*

What can we conclude from the above? A score standing alone has no fixed meanings; its meaning is dependent on reference to other relevant information. The first two interpretations made with reference to subjective expectations (of the teacher, Albert himself or his parents) are arbitrary in nature and hence should be avoided. The next three interpretations are made with reference to how his classmates performed in the same test. This is known as *norm-referenced* interpretation. The sixth interpretation is made with reference to a pre-set cut-score (which preferably has an empirical basis); it is a *criterion-referenced* interpretation and is the basis for the development of a very large number of standardized tests, especially in the USA.

**Standardized tests**

A standardized test (say, of Mathematics) has to go through many steps to develop such as: (1) identifying the instructional objectives, that is, mathematical knowledge and competencies to be assessed; (2) writing items for the identified objectives; (3) trialling the items with a large group of students for whom the test is meant; (4) conducting item-analysis to assess the efficacies of the trialed items; (4) selecting items which have been found to work well; (5) collecting data from another large group of students for whom the test is meant; (6) using the data to compile test norms (tables showing scores and the numbers of students getting each score); (7) releasing the finalised version; and (8) revising the test after, say, five years. These steps are not only time-consuming and labour-intensive but also require the collaboration of content specialists and assessment

experts, and of course teachers and students. No wonder test development has become a gigantic business in the USA dominated by a few organizations (e.g., the Educational Testing Service in Princeton). For a discussion on the advantages and disadvantages of standardized testing, see *Is the use of standardized tests improving education in America?* (ProCon.org, n.d.).

If Albert has taken a standardized test of Mathematics, his score is compared with the very large group of students whose scores were used to compile the test norm. Then, his score may get him an equivalent T-score (a kind of standard score). And, what does this T-score mean? Why should we use it?

**Standard scores**

A T-score is a kind of standardized score peculiar to educational assessment. It is peculiar because of the relative nature of scores obtained by using educational measures as contrasted with physical measures (e.g., weight, height). Take Albert's score of 75 for example. It is not a fixed quantity of a fixed quality like his weight and height for which there are standard instruments such as a weighing machine or a standard ruler. Albert's score is relative (to the normation group) although such scores are always mistakenly seen as absolute. For a fuller explanation of what standard scores are, see *Transformed scores – Standard scores* (Mypage, n.d.).

Let's say the test taken by Albert is a 100-word spelling test. He gets 75 because he can spell three-quarters of the words correctly. This looks fine until he takes another spelling test consisting of 100 easier words. In this case, he may get 85, 95, or even 100. The converse is also true if the words are more difficult. In short, Albert's score will vary with the tests (words) used to assess his spelling ability. Because of this, a different way of indexing Albert's spelling ability is to compare him with other students who have taken the same test and interpret his score according to where he stands among the peers. Thus, instead of just saying how good he is in terms of the number of words he spells correctly, we can know how much better or worse his performance is when compared with the norm (documented as the norm table). This is where the T-score becomes helpful.

When a standardized test is developed, the norm group of students has different scores, some very low, others very high, and most somewhere in between. For these scores, a mean (average) can be calculated as the "centre". Since not all students get the same score, there is a need to describe how widely spread from the mean the scores are. For this, standard deviation (SD) is calculated. If the group mean is 67, then, Albert deviates from the mean by +8 and the SD of the scores happens to be 8, then, his score is one SD above the mean. This gives him a z-score of 1.00; z-score is another kind of standard score that will be explained later.

Z-scores may take negative values and have decimals and so are inconvenient for

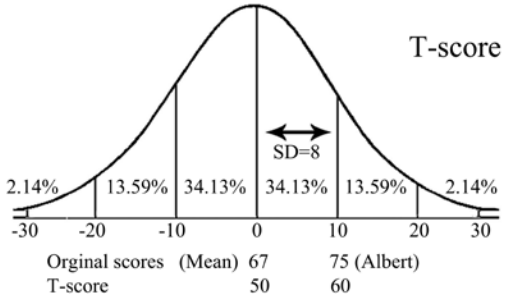
recording purposes. How to explain to parents that their children get negative scores (owing the teacher some marks?) is a major challenge. Besides, for different sets of test scores, standard deviations (SDs) are not the same. To overcome these problems, measurement experts come up with the bright idea of T-scores.

**From z-scores to T-scores**

The T-scores form a scale with a mean of 50 and a SD of 10. This is a scale universally agreed upon and used by measurement experts and so all tests can then have their original scores converted to it. An added advantage of using T-scores is that all scores from different tests can be considered "comparable". If the set of English Language scores (including Albert's 75) has a mean of 67 and a SD of 8, then Albert's 75 is now converted according to the formula to a T-score of 60 (i.e., T-score = 50+10*(Score - Mean)/SD = 50+10*(75 - 60)/8) = 60).

Aha! Have we not short-changed Albert by giving him a T-score of 60 which looks lower than his original raw score of 75? No. The conversion of original scores (those given by the test) to T-scores is like converting SGD or HKD to USD, using the appropriate currency exchange rate. The face value has changed but the buying power remains the same. So, Albert has not been short-changed. In this case, his T-score of 60 has placed him one SD above the mean of 50 and, according to the normal distribution (Figure 2), he is better than 84% of students in his class (i.e., 50% below the mean and 34% between the mean and one SD above it). Another way is to say that he stands at the 84th percentile and belongs to the top 16% of the students. So, by comparing with his peers, Albert has done pretty well (Figure 2).

Figure 2: The normal distribution curve




Thus, as you must have suspected by now, converting original scores to T-scores in actuality can change the basis of comparison and hence the interpretation of test results. As pointed out above, if Albert's score of 75 for spelling test represents correctly spelling three-quarters of the 100 words, his score will be different when the words in the test change. But then, we argue. The idea is that Albert's spelling ability at the time of testing is a fixed quality and should not vary with the test used and the same should go for his

peers – their ability should not change with different tests. However, we know that this is not true when different tests are used. By using T-scores, we can assess Albert in terms of his relative position (percentile) among his peers. When a more difficult spelling list is used, all pupils should get lower scores than previously, but their positions relative to one another should logically remain unchanged. This is an assumed advantage of using T-scores instead of the original raw scores.

# Axiom no. 2: Same scores may have different meanings

The above examples show clearly that the use of raw scores can lead to misunderstanding and misinterpretations for the simple reason that the same raw scores from different tests may not have the same meanings when they are interpreted with different references. A few more fictitious but realistic cases should interest you.

**Performance comparison**

Albert has scored 75 in both Social Studies and Science. In which test has he done better? Since the marks are the same for the two subjects, Albert has done equally well in both subjects. Hold on! As pointed out earlier, this will be true if and only if both tests have the same mean and the same SD – a most unlikely situation. Thus, unless the scores are converted to the T-scale, we cannot be so sure; 75 for Social Studies may turn out to be a better score because it has placed Albert on a higher percentile, and the converse is also possible. In short, two scores from two different tests do not necessarily mean the same performance level; they need to be standardized (scaled) before comparison can be made valid. Are you puzzled?

**Dollars, cents and scores**

A money example will help to make this clear. The first three columns in Table 1 show the numbers of "dollars" that Albert's father and uncle have. When we say they are equally rich (or poor) with 100 dollars, we are assuming that the monies in the four pockets are in the same currency. However, if monies in the left pockets are USD and they are converted to SGD (at a rate of 1.35), adding these to the SGD's in the right pockets shows that Albert's father is richer than his uncle. The same principle goes for the comparison of scores.

Table 1: The values of monies

| Before conversion | | | After conversion | | |
|---|---|---|---|---|---|
| Pocket | Father | Uncle | Currency | Father | Uncle |
| Left (USD) | 80 | 20 | SGD | 108 | 27 |
| Right (SGD) | 20 | 80 | SGD | 20 | 80 |
| Total | 100 | 100 | Total | 128 | 107 |

This is a reminder that two scores for two different tests cannot be directly compared because they represent different performance levels. Before comparing them, they have to be converted to the same scale (e.g., the T-scale) first.

# Axiom no. 3: A small difference makes no difference

Sometimes (or rather often) we see people insisting that a small difference is a difference. For example, a teacher marking a composition with the mark range of 30 insists that an essay is worth 22.5, not 22 or 23! Another example can be about a student who has failed because he could only get 48, two marks short of the passing mark 50. Yet another example, one school celebrates because it scores half a percent more passes and gets one rank higher than its rival school. Are all these small differences real?

**All scores have error!**

We need to realize and keep reminding ourselves that all assessment scores have errors. Such errors are not what we normally called mistakes but are fluctuations due to sampling. They are, technically, *measurement errors* (Johnson, Dulaney & Banks, 2005).

When we set test questions in any subject or any topic within a chosen subject, we are taking a sample of many theoretically possible ones (the universal of possible items). We then use these sampled items to test the students' knowledge or competencies. If we set another test, students' scores will change (remember Albert's spelling test). If we test a group of students using even the same test on different days, their scores will also change. And, if we ask different teachers to mark the same set of compositions, even using the same marking scheme, the scores will also be different.

Errors (fluctuation) in assessment are inevitable because of the sampling processes in constructing test questions and marking students' responses to open-ended questions. There are basically two types of such errors: the *random* and the *systematic* (Changing Minds, 2012). Random errors have to do with chance. For example, a set of compositions are marked by one teacher on two days. Because she is in good health on the first and is ill on the second, she is likely to give higher scores to those compositions marked on the first day and lower scores to those on the second day (or, possibly, the other way round). If the teacher is aware of this inconsistency, she can double-mark the compositions a second time. If she then take the average of the two marks for each paper, the inconsistency is likely to cancel out. There are other conditions that lead to fluctuations which will cancel out in the long run. (Unfortunately, she may never do this and so students whose compositions are marked more strictly can only blame themselves for bad luck.). The common practice of double or triple marking and taking the average in large-scale examinations is to minimize such fluctuations which may affect score reliability. It is more appropriate for the marking of open-ended questions which involve students writing

their own answers, such as composition for Languages or essay-type questions in Social Studies, Literature, and even Science.

Individual teachers have different expectations and marking habits influenced by their experience and personality. A teacher who has been teaching high-ability students naturally uses her experience with such students as a yardstick when marking compositions. She may also be, at the same time, a strict marker habitually giving lower marks. Thus, when marking a set of compositions, with her experience and personality combined, she will consistently (though unconsciously) give lower marks than what the compositions should deserve. This may give rise to systematic errors. Some of the teachers were so confident about their marking that they awarded half-a-mark! And, how important is the half-mark? Read this:

> *"Do you know what is the importance of half a mark? It determines whether you pass or fail. It determines whether your report book is going to have all blue or a "one" or "two" red marks among the blues. This is called "pass" or "fail", and how many subjects you pass or fail, it is going to determine whether you get promoted to the next level. This is all the olden days..."*
>
> (Peace, 2008)

For a set of answer sheets to be marked with a computer, one or more errors may occur such as in the coding of answer keys. If "c" is coded for the correct answer when it should be "b", all students who have answered the miscoded items correctly will earn fewer marks than they deserve. Conversely, those answering wrongly may get a mark higher if they (lucky them) happen to choose "c" (the wrongly coded option). Such errors are also systematic because they do not cancel out in the long run. This type of errors adversely affects the score validity in that the scores do not accurately reflect students' true ability.

Due to such errors, measurement experts consider an observed score (the score a student gets after assessment) as consisting of two parts: the *true score* (which can truly represent student's ability which the test is trying to estimate) and *error score* (the part of the observed score due to random errors as described above). It is not possible to measure students' true scores directly. Knowing that there are fluctuations contributing to random errors, test developers take pains to minimize them through careful and multiple marking as well as by controlling the testing conditions. The argument is that by minimizing the errors, observed scores will reflect true scores more accurately (Trochim, 2006).

There are several ways of evaluating score reliability. American experience shows that teacher-made tests generally have score reliability values of around 0.7 meaning that tests constructed by teachers yield scores which are about 70% trustworthy. This suggests

that teachers should not be dogmatic about the marks they give and definitely not about small differences!

**A score is not a point!**

In view of the errors which cannot be totally eliminated, measurement experts advise that a score should not be seen as a fixed point on a scale but as one possible point or a number of points within a specified range on the scale. This takes us to the concept of *standard error of measurement* (SEM).

Let us say that the Chinese Language test has a SD=3 (which is rather small) and its score reliability in terms of Cronbach's *alpha* is 0.7. The SEM should be 1.6 according to the formula SEM=SD*$\sqrt{}$(1 – r), where r is the reliability coefficient, *alpha*. Then, we ask ourselves how much confidence we want to have when reporting a score for this test. Let us be not too ambitious but choose to be 95% confident in making a statement about a student's performance. Now, according to the normal curve, a 95% confidence level requires that we allow for an error (fluctuation) of 1.96 SEM (or rounded to 2 in SEM). Then, a score on this test will fluctuate with an error of ±2*SEM or ±3.2 (or rounded as 3). In Albert's case, instead of seeing his score as a fixed point of 75, we should think of his score (for whatever subject) as falling between 72 (=75-3) and 78 (=75+3) in 95% of the times. This so-called band-interpretation of test scores is in contrast with the point-interpretation. Of course, band-interpretation makes administrative decisions (pass/fail, select/reject) more complicated and inconvenient. However, it is desirable for two reasons. First, it takes due cognizance of the fact that tests scores are fallible and hence should not be taken dogmatically. Secondly, when making important decisions on students, test scores should not be the only criterion; other information needs be considered, too.

**Misplaced confidence of spurious precision**

In view of the measurement errors (fluctuation) due to the sampling of subject content, student's testing behaviour, and teacher's marking habits, a small difference between two scores should not be taken too seriously. For example, a difference between 48 and 50 can well be due to measurement error. In other words, if 48 comes from the same English Language test taken by Albert with a SEM of 3, at the 95% confidence level this score will fall with the range from 45 to 51. Had the student taken the same test again and again, he will get between 45 to 51 marks. Since this mark range includes the passing mark 50, he should be passed.

This example shows how confidence may be misplaced in small mark difference leading to erroneous decisions. The emphasis on a small, immaterial mark difference is called spurious precision, that is, a precision which is not really important or meaningful. Spurious precision may seem to be a spurious issue, but the consequences of basing important decisions on spurious difference may have long-lasting undesirable

consequences for students and the nation (in terms of manpower loss). As the author of *How to lie with statistics*, Huff (1954), says, "*A difference is a difference only if it makes a difference*." As a corollary, it is a conceptual sin to make a spurious difference a difference in order to make it a difference.

**Is banding the solution?**

Perhaps it is the awareness of such problems of measurement error and spurious precision that has led to the use of banding, that is, grouping students within a specified mark range and giving them the same label (band). This is a partial solution but not a perfect medicine.

Table 2 show the bands obtained by two pupils. Combining the bands, Albert has performed better than Bob has. After all, canceling out A-A and B-B, Albert is left with an A but Bob a B. Let's assume that band B is for scores ranging from 60 to 84, and band A is for score 85 and above. It may just happen that the A's Albert gets are the beginning scores of band A and his B is from the low end of band B. And, Bob gets the beginning score of band A just like Albert, but his B is from the top end of band B. Then, in terms of actual scores, Bob scores better than Albert and not the other way round. This example is given here only for illustration, but it does not mean this cannot happen.

Table 2: Scores and bands of two students

| Subject | Bands | | Scores | |
|---|---|---|---|---|
| | Albert | Bob | Albert | Bob |
| EL | A | A | 85 (A) | 85(A) |
| MT | A | B | 85 (A) | 84(B) |
| Math | B | B | 70 (B) | 84(B) |
| Overall | (2A+1B) > (1A+2B) | | 240 < 253 | |

So, is banding the solution? As the assessment expert Wiliam (2000) says, "*A cure that is probably worse than the disease*." What can we do, then? Not much. One partial solution is to have more bands each with a shorter mark range. The logical extreme extension of this is to have too many bands and then we are back to square one. So, be cautious.

# Axiom no. 4: Weights may be non-functioning

Every examination paper will consist of more than one part for assessing one specific item of knowledge or competency. A simple example is the case of a Language paper which has a written component and an oral component. Of course, the written component always comprises several different sub-sections such as vocabulary, grammar,

comprehension, etc. For the sake of illustration, just say it has only the written and oral parts.

Usually, different parts of an examination are given different predetermined weights, for example, 80% for the written components and 20% for the oral component, to reflect their relative importance. The hidden message is, for this example, to let students (and their teachers and parents) know that oral language is important though not as important as the written part; the implication is not to neglect oral language since it is also to be assessed. The message is loud and clear. What is the effect in terms of final results?

It is a well-known fact that test scores with a wider spread (SD) have more influence if they are summed for an indication of overall performance. Table 3 is a typical example taken from a Language examination.

Table 3: Weights of components and scores in a Language examination

| | Written (80%) | Oral (20%) | Total |
|---|---|---|---|
| Albert | 75 (1) | 10 (3) | 85 (1) |
| Bob | 70 (2) | 12 (2) | 82 (2) |
| Calvin | 65 (3) | 15 (1) | 80 (3) |

As can be seen, for the writing component, Albert is the best and Calvin is the worst, with Bob in between them. For the oral component, the orders are just the reversed. When the scores for the two components are added, the totals will rank Albert first, Bob second, and Calvin third. Thus, the final ranks are the same as the ranks for the writing component, and the oral component has no influence. This happens because the written component has a much wider range (a larger SD if calculated) than the oral component has. This will happen also when scores for different tests are added.

Table 4 shows the performance levels in English and Mathematics of a class and the scores obtained by three pupils. The scores for the two tests are added and the totals are used to rank the students, Albert ranked first and so is better than Bob ranked second who in turn is better than third-ranking Calvin. The rank-orders are the same as those for English. Note that the SD of scores in English is double that of Mathematics. In this case, Mathematics (with a much smaller SD) plays no role in deciding who is better.

Table 4: Weights for different subjects

| Subject | Mean (SD) | Albert | Bob | Calvin |
|---|---|---|---|---|
| English | 70.0 (4.00) | 75 (1) | 65 (2) | 60 (3) |
| Mathematics | 65.0 (2.00) | 59 (3) | 62 (2) | 61 (1) |
| Total | - | 134 (1) | 127 (2) | 121 (3) |

**More complex situations**

So far, for simple illustration, we have been using examples involving two tests or two components. Things are more complex in reality. In Table 5, the raw scores obtained by Albert and Bob for four subjects suggest that they are equally good, both having a total of 270. If there is a scholarship or other award, they are equally qualified. However, as subjects have different means and SDs, simple summated scores are misleading. The totals for T-scores are different. Now, it is clear that Albert (with Total=199) is a more deserving candidate than Bob (with Total=193), if the difference of four T-scores is considered important enough.

Table 5: Raw and T-scores of two students

| Subject | Mean (SD) | Original score | | T-score | |
|---|---|---|---|---|---|
| | | Albert | Bob | Albert | Bob |
| EL | 70.0 (4.00) | 75 | 70 | 63 | 50 |
| MT | 65.0 (8.00) | 70 | 75 | 56 | 63 |
| Math | 70.0 (5.00) | 65 | 60 | 40 | 30 |
| SC | 65.0 (5.00) | 60 | 65 | 40 | 50 |
| Total | - | 270 | 270 | 199 | 193 |

T-score transformation is employed for the PSLE in Singapore to solve the problem of unequal means and SDs among subject tests. The same problem exists when raw scores for school-based examinations are summed as indicators of the overall performance level. With computing facilities readily available, this problem can be solved by adopting the same approach what is done for the PSLE.

**Does summing up scores make sense?**

It is a common practice that different assessments taken throughout a year are given different weights to indicate their relative importance. A typical situation is that shown in the Table 6 where the two term assessments are given a weight of 15% each, the mid-year assessment 30%, and the end-of-year assessment 40%.

Table 6: Weights for different assessments

| | Term 1 | Mid-year | Term 2 | End-year | Average |
|---|---|---|---|---|---|
| Marks | 72 | 68 | 74 | 78 | 73.5 |
| Weight | 15% | 30% | 15% | 40% | 100% |

The problem of different means and SDs when original scores are summed for an overall performance indicator (total) will still happen. This means, in spite of the different intended weights, components having larger SDs will be more powerful in the final total,

rending those with small SDs non-functioning. Besides this persistent problem, there is also a conceptual issue. In this example, the four assessments are not mutually exclusive since some content tested earlier in Term 1 will be tested again later. Those tested for the mid-year may also be tested in year-end examination paper again. Such over-lap means that some content are over-tested or double-counted and getting double weight or more. Is this desirable? Furthermore, the four assessments are conducted at different points of the year and at different points a student has different achievement levels. When scores are added (even after weighting) and an average is derived at, does the average really show where the student is *at the end of a year's learning*? If not, where is the more accurate indicator?

Imagine that you are driving from Singapore to Penang (or from Hong Kong to Shanghai) and have to stop at three different places. Every time you stop, you record the distance covered. When you reach the destination, you calculate the average of the distances and say "on average, I have driven xyz kilometres from X to Y." How will this sound to your friend? The message is that average does not always make sense. Stopping at different cities to record the distance covered is analogous to formative assessment, while recording the total distance traveled is analogous to summative assessment. It appears that the practice described above for finding end-of-year averages is a mix-up of these two different approaches to assessment.

Things are a little bit more complicated than this. It is readily appreciated that some subjects are developmental in nature while others are cumulative. For cumulative subjects (perhaps, science subjects for which topics are discrete), adding marks obtain from different tests for an overall indication may make sense. On the other hand, for developmental subjects (such as the languages), what a student is able to do at the end of a year indicates the cumulative effect of learning; and, therefore, adding and averaging marks obtain from assessments taken over a year may not make sense. This is obviously a topic worthy of further discussion and future research.

## Axiom no. 5: Assessors may be unreliable

So far, our discussion has focused on scores and students, as if these are the only sources of misinterpretation. The fact is, teachers who mark the papers can also be a source of error, especially where open-ended questions are concerned. This is a century-old problem and is still around. If you think that this will only occur in the marking of compositions, you will be surprised that it can happen in the marking of Mathematics paper as well, as early research shows.

A concrete example of this problem is how a group of experienced teachers marked *one and the same answer* to a question on vitamins (Science!). The question asks candidates to name four vitamins and their common sources and to tell for each whether it can be stored in the body and whether it can be destroyed by heat. An answer to this question was photo-copied and 43 experienced teachers marked this one answer independently. They were to indicate whether it was a poor, weak, average, good or excellent answer. Also, they were to award a mark within the range of zero to 30 with the passing mark of 15 (By Singapore convention, 50% is a passing mark. What about Hong Kong?). The marks and grades given by the teachers are shown in Table 7.

Table 7: Grades and marks awarded by teachers to the same answer

| Marks | No. of grades given | | | Pass / Failure given by teachers |
|---|---|---|---|---|
| | Weak | Average | Good | |
| 22-22.5 | - | 3 | 6 | No. of passes = 41 |
| 20-21 | - | 9 | 6 | |
| 18-19 | - | 10 | - | |
| 15-17 | 1 | 6 | - | |
| 42-14 | 1 | 1 | - | No. of failures = 2 |
| Total | 2 | 29 | 12 | 43 |
| Median | 14.5 | 18.5 | 21.5 | - |
| Range | 5 | 10.5 | 2.5 | - |

No teachers considered the answer as poor or excellent. Two teachers considered it as weak, 29 as average, and 12 as good – all for the *one and the same* answer to an essay-type question on a factual topic! Even within each grade, for instance "average", the marks given varied as much as 10.5, again for the one and the same answer. Of the 43 teachers, two teachers failed it and 41 passed it. If this happens with just one answer, imagine what may happen when a paper consists of several open-ended questions. In this case, it may not be an exaggeration that whether a student passes or fails depends more on his luck or rather on who marks his answers.

Earlier on, it was suggested that the teacher's experience, marking habit, and personality play a role in inconsistency in marking. The 43 teachers were asked which schools they came from. There seems to be a relation (correlation) between the school type and the marks awarded. Teachers who came from the so-called good schools tended to give lower marks, and vice versa. This is perfectly understandable since teachers will (unconsciously or subconsciously) use the kind of answers they have been marking as a reference for marking this particular answer. In this example, the teachers' personalities were not studied. Teachers' idiosyncrasy in marking is obviously a topic worthy of further discussion and research.

Perhaps, the awareness of such a problem has led to assessment experts to come up with suggestions such as the use of model answers, marking schemes (the old fashion name for assessment rubrics), product sample scale, post-marking moderation, statistical scaling, etc. These may help to reduce the size of the problem but none is a perfect solution, and one wonders if there ever will be one. Again, the best advice is to be cautious.

## Axiom no. 6: When interpreting test scores, be humble and flexible

At this point, it is good to take stock of what has been discussed so far. Traditionally, assessment results in terms of scores and grades are used to sum up student's learning up to a point in time. This is *assessment of learning*. In recent years, *assessment for learning* gets a lot of attention. This is using assessment results to guide and direct further learning of the students. The two approaches have different purposes and different data are required. However, the reality is that, the same assessment results are used for both purposes, retrospectively as well as prospectively. Whichever approach is emphasized, the same process is involved: from collecting data by testing, through analyzing data to gain information about learning, and then to making decisions on instruction and on the students' future development. Irrespective of the time span, such decisions have long-lasting consequences to the students and all around them – their teachers, school administrators, parents, and even the nation. Hence, assessment is a very serious business and deserves to be done well.

Nonetheless, problems arise because of the relative nature of educational assessment which yields data that can be interpreted in a variety of ways, as contrasted with the case physical measurements such as weight and height that fixedly quantify fixed quality. Therefore, assessment results need contexts for them to be meaningfully interpreted. This peculiar nature of educational measurement gives rise to the problems relating to the following conditions:

1. Educational measures are relative and highly fallible.
2. Educational measures are samples which have measurement errors (fluctuations).
3. Weighting to reflect relative importance of sub-tests may or may not work.
4. Summing up scores of subtests or a few tests may be misleading.
5. Marking of open-ended responses are always unreliable.
6. Spurious precision of small difference is more often imagined rather than real.

Each of these causes conceptual and technical problems that need be solved but perfect solutions are not available. All that can be done is to minimize the severity of misinterpretation as much as the teachers' assessment competence allows. Conceptual

and technical problems are separate issues though always related. Technical problems are easier to handle. They can be solved to a large extent by learning relevant statistical techniques to treat the assessment data properly, if there is the will.

Conceptual problems are more difficult. They not only call for a will to change but also require re-orientation through the melting of long-held erroneous ideas and crystallization of new shapes. This has been found to be difficult in education. Before the time comes, the only advice that can be given is for assessment data consumers (teachers, counselors, and school administrators) to be flexible and humble when interpreting them and using them.

# Conclusion

There is no denial that test scores play a very important role in teaching and learning. For this one reason, they should be appropriately interpreted and used for the benefits of the teachers and their students. Misinterpretation leads to misinformation which in turn leads to misdirection and wrong actions. Valid interpretation of test scores requires some understanding of the basic statistical concepts involved as illustrated in this paper. Uncertainty in interpretations and the uses of test scores are not totally inherent in scores but, to a large part, in ours. Seen in this light, perhaps the title of this article should have been "*How much can we trust* ***our interpretations*** *of test scores*?". As teachers, we assess students and thereby create test scores (and grades), but then as little Alice says in the Wonderland,

> *"An author doesn't necessarily understand the meaning of his own story better than anyone else."*

# Notes

This paper is application oriented and written for practising teachers in this connection. Instead of following the traditional style of citing articles to support the arguments, readable and interesting websites are listed in the Reference list for those who wish to pursue the issues further in-depth.

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# 測試分數可信程度如何？

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**摘要**

學業測試結果，對學生有重大的影響。由於教育測量的相對性，測試得分可以有高度的變動性，不可當作毫無誤差的資料。本文提出分數可能被錯誤解釋的幾個例子，說明若錯誤解釋分數對學生可能產生的後果及如何避免。

**關鍵字**

測試，考試，分數的解釋，分數的換算，分數的信度

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# 臺灣 12 年國民基本教育體制研究 ── 對照美國、德國、法國國民教育體制

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**摘要**

臺灣實施 12 年國民基本教育目標之一是實踐教育正義，但是，後期中等教育適性與分流不足、城鄉與校際教育資源落差大問題亟待受正視與解決。本文透過對照美國、德國、法國國民教育體制，提出發展臺灣 12 年國民基本教育的意見，旨在：(1) 倡導 12 年國民基本教育是保障生存、創造生活幸福與生命意義的基礎工程，適性與分流是教育手段；(2) 指出 12 年國民基本教育規劃採全納式與結構功能，前者縱向銜接與橫向聯結，後者具階段性與功能化；(3) 凸顯國中與國小階段教育是 12 年國民基本教育基礎；(4) 解釋 12 年國民基本教育目標實踐繫於教師教育，與 (5) 就 2014 年臺灣實施 12 年國民基本教育提出建議。

**關鍵詞**

12 年國民基本教育，適性與分流，教育資源，全納式，教師教育

## 甲、前言

在知識經濟與創意經濟的時代，歐美工業發達國家、開發中國家如臺灣、南韓、印

度、紐澳，未開發國家如中國大陸、東南亞國家等在總體教育投資與推動教育革新是不遺餘力的。另，在全球經濟競爭氛圍下，學校教育成為國家發展的基礎工具，國民教育（National Education）、國民基本教育（National Basic Education）是打造國家政經發展與社會和諧的基礎工程。

國民教育實施年限長短，反映國家綜合實力與社會現代化程度；而國民基本教育實施年限延長採逐漸增加，多非「一步到位」。國民基本教育包含義務階段與非義務階段，非義務階段教育呈現分化（differentiation）與歧異（diversity）態勢，二者合計12至13年，前者年限是9至10年，後者年限是3至4年，教育結構計有8+4、6+3、5+4、4+5、4+2+3、9年一貫等。

綜觀臺灣國民教育發展與沿革，自1968年實施九年義務教育至今，前期與後期中等教育入學率近百分百，就學機會是供大於求，現階段後期中等教育問題是適性與分流不足、城鄉與校際教育資源落差大，而「透過讀書改變命運」、「披星戴月只為進明星學校」，卻又是莘莘學子寫照。基於教育正義與社會和諧，臺灣將於2014**年實施後普九之國民基本教育**，統稱12年國民基本教育。「他山之石，可以攻錯」，分析美、德、法國等12至13年之國民教育體制，汲取國外經驗，冀以提出規劃12年國民基本教育參考。

## 乙、12年國民基本教育

綜觀全球教育發達國家之總體教育體制規劃，高中職以下教育年限約12至13年，佔總教育時間四分之三，小學至後期中等教育具程序結構，包含初等教育與中等教育，中等教育又分前期中等教育與後期中等教育。另，高中職以下教育辦學主體是國家，是謂國民基本教育；分義務與非義務階段，是國家教育體制的基座，在整體教育發展上有其重要性。

### 一、旨趣

12年國民基本教育旨趣，為學習者發展而言，奠基於以資質、性向、興趣、就業、生涯與參與選擇取向之個性與有德行者（Humboldt, 1903）；為社會運作而言，具共同性，但又由多元與歧異個體組合的政治、經濟與文化團體；為全球網絡國家境遇而言，匯聚多元與層級網狀的綜合力與具競爭的實力。

12 年國民基本教育，其中 9 至 10 年義務教育指政府有義務運用公共資源來保障所有適齡學童接受的教育，具強制、普遍與免費原則；3 至 4 年後期中等教育不具強制性，旨在提供國民較優適應力、保障社會轉型人資需求與厚實國家競爭力。

### 1. 提升國民素質

在數位科技與傳播科技助益下，對於全球化與多元化新增要素之教育，歐美先進國家由延伸國民教育年限、做為補強之道，期以一則提升國民素質，二則正視世代、年代與時代交替，三則符應世界潮流變換，四則補強主體意識，以及新世紀價值觀，相關內容如態度、溝通、合作、正義、判斷力、表現能力、自律……以及跨文化與親近自然之人文素養等。

### 2. 發展學術理性

〈莊子．養生主〉：「吾生也有涯，而知也無涯，以有涯隨無涯，殆已。」經驗、知識、智慧藉教育結構化、目標性與效益性傳遞，以達到積累、傳承與創造新的文化與文明的目的。

人特殊性主要彰顯於：「人是理性的動物」、「人是會思考的蘆葦」、「我思，故我在」、「知識即力量」、「存在決定意識」等，Newman（1801-1890）主張教育旨在培育理智人，理智教育（mental cultivation）是真實心智教育（real cultivation of mind）的基礎（Ker, 2011）。發展學術理性，意旨藉經驗描述與理論說明、具體比喻與科學論證、哲學思辨，習得邏輯性、系統性與批判性的理性推理與歸納，並據以運用於學習、工作與生活。

自認知科學、情緒智商、統觀悟性獲得重視，人有理性、感性與悟性逐漸形成共識。邏輯理性並非理性的全部，Newman 以感覺、情感和行動要素補充其教育理念，完善其自由心智的教育思想（陳小紅、于汝霜，2009）。Hayek（1899-1992）在《自由秩序原理》書中指出，新經濟型態的知識需包涵：（1）理性知識的集合，如學科知識、專家知識、有關特定事實的知識；（2）邏輯理性不及的因素，如文化、制度、集體意識；（3）非理性因素如直觀、領悟等（Hayek，譯 1998）。

### 3. 培養謀生技能

Spencer（1820-1903）主張，教學是為「完滿生活做準備」，並責付科學知識指導

人的活動與訓練人的心智（Spencer，譯 1962）。自 20 世紀 90 年代以來，數位化資訊與傳播科技催生全球關聯網絡化與國際化，人類文明期由生產取向之農業社會、經濟與服務取向之工商業社會，邁入至今日之科技與創意取向之資訊化社會，對應不同社會之謀生技能各有所重，相關信念與價值體現於思考邏輯、態度與行動、專業與倫理等。

## 二、理論基礎

19 世紀末，國民教育旨趣是發展國家意識；20 世紀，國民教育旨趣是民主素養與經濟職能發展並重；21 世紀初則是主體意識、社會正義與創意取向知識經濟，由啟蒙、文明，以至服務全球化知識經濟發展，教育旨趣逐漸聚焦於資質、創意取向之人力資源開發。

### 1. 人力資本

21 世紀，網路帶動知識快速消長、知識經濟創意發展趨勢與現代化高人力資本需求，投資教育與創造人力資源成為全球各國發展重點。鑑於高等教育社會經濟效益有目共睹與現代高等教育（Modern University）之「海納百川」機能，後期中等教育應規劃學術、專業與職業取向之分化教育。另，觀諸教育發達國家之總體教育規劃涵蓋國民教育與高等教育，12 至 13 年國民基本教育是高等教育基礎工程，國民教育扎根與深耕程度影響高等教育的發展；相對的，在百輴爭流與百花齊放下，高等教育責付國民教育規劃路徑，致令二者關聯呈雙向互動與回饋。

### 2. 多元智能

Mill（1806-1873）在《論自由》書中指出，人得到最為多樣化的發展具有絕對且本質的重要性（Mill，譯 2011）。後現代倡導主體性、開放社會多元化與創意經濟發展趨勢，多元主義與多元智能理論從而成為教育多樣態與奇異發展另一支撐依據。

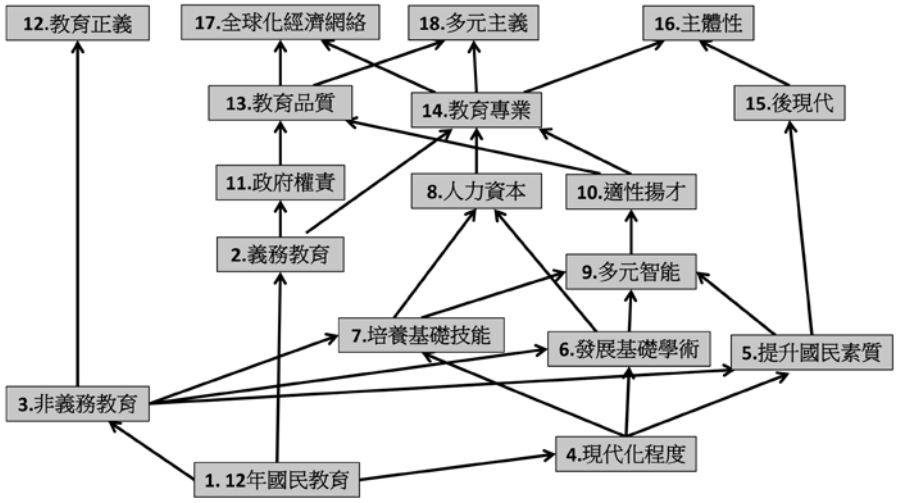
Intelligence，韋氏詞典定義為：「學習，理解，或應付陌生或困難環境的能力」，學者或側重推理思辯能力，或側重行為功能（Sternberg & Detterman, 1986）。1983 年，Gardner 提出多元智能理論（multiple intelligence theory），認為智能具領域特殊性（domain-specific），智力是「在某種社會和文化環境的價值標準下，個體用以解決自己遇到的真正難題或生產及創造出某種產品所需要的能力」，智力不是一種能力而是一組能力，智力不是以整合的方式存在，而是以相互獨立的方式存在的（Gardner, 1983, 1999）。

綜合上述，運用詮釋結構模式（Interpretive Structural Modelling, ISM）（Warfield, 1976, 1982）於各要素關聯構造（見表一），要素以 C 表徵之，可得階層結構圖示（見圖一）與關聯結構（見附錄）。

表一 12 年國民基本教育要素一覽表

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. 12 年國民教育 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| 2. 義務教育 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 3. 非義務教育 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4. 現代化程度 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5. 提升國民教育 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 6. 發展基礎學術 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 7. 培養基礎技能 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 8. 夠人力資本 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 9. 多元智能 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 10. 適性揚才 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| 11. 政府權責 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 12. 教育正義 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13. 教育品質 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 14. 教育專業 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 15. 後現代 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 16. 主體性 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17. 全球化經濟網絡 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18. 多元主義 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

圖一 12 年國民基本教育運用詮釋結構模式



# 丙、美、德、法國家之國民教育

美、德、法國家之國民教育涵蓋：國小初等教育旨在啟蒙學習者性向與潛能，採多感官、感知性學習典範，摸索、試探、情境操作、「分享」與「表達」體驗是該階段的學習原則;初中教育賦予試探、定向、興趣培養任務，學習範式加重理性認知、理解比重;繼起高中職教育則定位於銜接高等教育階段之學術與專業教育之前置預備性教育，提供基礎學術、專業或就業發展的「分化」教育，是初中階段「定向」後的進階教育。

## 一、共同性

歐美文化共同根基是希羅古文化與基督宗教，差異影響因素是自然地域與人文社會，美國主實用主義與政治哲學，德國與法國則主理性主義與價值哲學。教育共同性如以人為本、兼具目的與工具性。

### 1. 學生中心

Key（1849-1926） 在《兒童的世紀》書中，開啟學童本位的教育理念（Key，譯1925），她主張以 Rousseau（1712-1778）自然教育原則改革教育，教師為兒童創造適當的環境，讓兒童在活動中自由學習，而自然是喚起美感的天然環境，其中可孕育優美的感情。

國民基本教育旨在開發人的理性、情意與悟性，教育理念如學生中心、適性原則、與資質利基，教育實踐由理念意識、個性特質到實質能力，三者關聯結構是整體、個性與能力，今之教育哲學主結果取向表現力、生存力及其素質，學習績效是新生成教育概念。另，開放社會對於天賦能力和天生才能之境遇成就現象，國民教育發展多採由年限延長、量擴充、機會均等，到其後適性適才與質的提升。

### 2. 存在哲學

存在哲學在教育上的意義：（1）正視生命存在、（2）厚實個己存在利基，以及（3）認知共生必要性。12 年國民基本教育是普通教育（general education），藉多元情境與多元系統知識，以利（1）啟蒙、（2）扎根多元化個性與智能利基、（3）學習求生、適應與精神滿足、（4）建構共同價值基礎、（5）認知社會發展及其特性，以及（6）養成終身學習習性。

### 3. 優勢利基

優勢利基理念源自於企業界，視域分宏觀與微觀面，前者指在全球競爭氛圍與知識經濟發展趨勢下，國家優勢生成奠基於與時俱進的經濟產業與優質人資；後者指個人生存之道是培育具達爾文式之優質之操作力與執行力。就現實與實用主義而言，不論是個人職識能發展，抑或是國家型塑綜合力，掌握、創造與善用利基蓄勢以待勢在必行。

面對創意取向職識能訴求與多元智能理念，初始教育利基生成是在「天生我才必有用」、「珍惜所擁有的，不看自己沒有的」根基上，責付為期 12 年國民基本教育目標性、結構化與系統性開發潛能與能力。

## 二、歧異性

今昔教育價值觀變化大，由重文輕理、重理輕工、重理輕文，以至近日理工唯實、人文唯名，前者直接助益國家經濟發展與社會文明，後者是實現前者的基本前提，祇是，前者受到重視遠大於後者。

### 1. 階級性

後期中等教育具階級性，可以德國為代表，「從十九世紀四十年代起，資產階級在政經重要性趨近貴族，兼營工商業的貴族也開始向資產階級轉化……文實中學正是適應這一轉化而出現的。」（王天一、夏之蓮、朱美玉，1984a）事實上，教育階級性現象屬全球性。

### 2. 學術性

後期中等教育具學術性可以法國為代表，拿破崙設立國立中學（Lycee）與市立中學（College），二者是中等學校主要類型，屬預科教育；1852 年，中學課程設計出現文、實分科的做法，具實科性質學校於 1891 年改稱現代中學，畢業生在學業程度和升學資格上被視為是不足的（王天一、夏之蓮、朱美玉，1984b）。

### 3. 實用性

後期中等教育具實用性可以美國為代表，就讀綜合中學人次比例達 98%（劉怡慧，2000），屬通才教育與性向興趣取向；課程設計彈性與多元化，教學模式主啟思、參與操作與合作學習。

# 丁、12 年國民基本教育

12 年國民基本教育既是教育工程，並且是社會工程，前者強調專業性，後者意指功能性；涵蓋國小、初中與高中職三階段，其中國小與初中階段教育屬義務性，高中職階段教育屬非強制性，但負有承上啟下作用，是國民義務教育與高等教育之中介。另，國小教育根基不牢，影響初中教育深耕；初中教育是高中職教育多元定性定向發展之基礎。

## 一、教育哲學

為臺灣而言，教育哲學觀虛實併陳，前者反映於教育理念與另類教育方案，後者體現於升明星學校、進一流大學為教育目標。

1994 年，「410 教改遊行」訴求開啟國內適性教育思維與多元教學模式，美中不足是未能正視學習者天生資質歧異、性向多樣態、學習意願個別差異、家庭與社會之南橘北枳效應，以及不察生存識能發展模組與生變性，致令今昔教育生態與文化氛圍變化不大：（1）教育改革侷限於問題解決、應變之需，權宜性方案、補強方案成為政策性方案；（2）教育形式主義模糊教育本質、教育無脈絡性淡化教育旨趣，進而型塑單向度的社會與單向度的人（Marcuse，譯 1990）；（3）知識應用性、工具性凌駕先驗理性旨趣、理性演繹之意義性價值，以及（4）學習非為厚實人生幸福與探究宇宙真理之益，而成了創造科技文明、滿足物質慾望之器。

可見未來，12 年國民基本教育哲學亟待建構：首先，化解晉升好學校、最終進好大學是教育唯一化意識；其次，凸顯理論、實務與實踐脫節乃是扭曲的教育；複次，責付教育有厚實就業職識能、預視人生可能變化功能，最後，健全人格教育，倡導自我價值認同與富社會責任感的國民。

## 二、義務教育

「求木之長，必固其根；欲流之遠，必浚其源。」根據聯合國教科文組織 1998 年《世界教育報告》顯示：義務教育平均年限為 8 年，歐美發達國家平均年限為 10 至 12 年，但免費教育則為 12 至 13 年（教育部，2003）。另，義務教育實施多分為二階段、三階段，少有是為期 9 至 10 年一貫制的。

觀諸臺灣義務教育發展，1939 年 10 月 18 日制定《義務教育實施要綱》，1943 年義務教育普及率 71%（維基百科，2012a）；1947 年頒訂《臺灣省學齡兒童強迫入學辦法》，1975 年國民小學入學率達 99%，1984 年國民中學入學率是 99%。1967 年 8 月 17 日台統（一）義字第五零四零號命令公告：「茲為提高國民智能，充實戡亂建國力量……國民教育之年限應延長為九年，自五十七學年度起先在臺灣及金門地區實施。」

依據教育部統計處 2010 年統計資料顯示，15 歲以上人口不識字率降低至 2.09%，國小畢業生繼續就讀國中比率，1966 年為 59.04%，1971 年增至 80.85%，2009 年達 99.73%（維基百科，2012b）。義務教育旨趣：國家意識、掃盲、經濟發展與現代化，以及提升國民素質與厚實謀生職識能。

## 三、後期中等教育

面對知識經濟與全球化競爭的市場機制，後期中等教育「向上提升」是必然趨勢，後期中等教育與高等教育發展不宜各自為政；相反的，正視二者關聯生成，而高等教育是後期中等教育的「進階教育」，後期中等教育是高等教育先導性「預科教育」，經濟利益是結合二者之利器。

依據教育基本法第十一條規定：「國民基本教育應視社會發展需要延長其年限。」（教育部，2011）21 世紀初，臺灣總體教育即已進入「普及化」階段，2014 年即將實施之 12 年國民基本教育似是補正其政治程序罷了。

後期中等教育發展狀況：自 1986 學年度後，國小學生進入國中比率已達 99%；國中學生進入高中職，1991 學年度是 86%、2003 學年度是 95%，但是，國中畢業生就學機會率是 107%（教育部，2001）。

12 年國民基本教育自準備階段進入「勢在必行」歷程：1983 年，教育部提出「試辦延長以職業教育為主的國民教育」；1990 年，行政院提出「國中畢業生自願就學高級中等學校方案」；1993 年，教育部提出「發展與改進國中技藝教育方案──邁向十年國教目標」，2001 年推動高中職社區化，2004 年成立「推動 12 年國民教育工作圈」，2007 年成立「12 年國民基本教育工作小組」，並完成「12 年國民基本教育規劃方案」（張文昌，2011.11.17）。2009 年 9 月 4 日，教育部公佈 12 年國民基本教育先導計畫《擴大

高中職及五專免試入學實施方案》，並將於 2010 至 2011 學年宣導推動，2012 學年擴大辦理（教育部，2009）。

2010 年 8 月第 8 次全國教育會議綜合座談上，行政院宣布「12 年國教由坐而言進入起而行階段」，繼而於 2011 年元旦文告宣示教育邁入新紀元，並「啟動 12 年國民基本教育，分階段逐步實施，先從高職做起，預定 2014 年高中職學生全面免學費、大部分免試入學。」（中華民國總統府，2011）

《12 年國教：超額比序》，凸顯 12 年國民基本教育政策待釐清與公諸論證之，臺灣國民教育問題不是時間、財政、政治性，而是教育專業，即後期中等教育未先釐清其在高等教育與前期中等教育之功能，滋生疑慮是可預期的；相對的，其在定位之際，務必面對後期中等教育已存問題，如各縣市「明星學校」外之他校功能不明、校際教育效益良莠不齊、來自政府的教育投資明顯不足，如私中與國立高中比例是 0.79：1，私立職高與公立高職比例是 0.7：1（教育部統計處，2012a），以及長期忽視城鄉教育落差與學習者資質或素質問題等。

## 戊、結論與建議

21 世紀，高等教育是推動國家永續發展，提升國家競爭力的關鍵要素。就教育體制而言，高等教育位居金字塔型體制最上層，其下是中等教育之後期中等教育，二者層級關聯不宜切割各自考量。另，為絕大多數學習者而言，後期中等教育需求屬性與學習者資質、興趣與就業考量等因素有密切關係。

### 一、結論

「學校要變好，教育要改革；教育要改革，政策要出爐。」教育是促進社會進步的原動力，臺灣將於 2014 年實施 12 年國民基本教育，就《12 年國教 OK，但請別搞掉明星高中》、《論十二年國教隱憂 —— 有想過會有一個世代被犧牲嗎？》對政策質疑，凸顯下列問題：

#### 1. 系統思維不足

綜觀國民教育發展及其沿革，一則相關體制建置具階段性，二則採用專家取向之政

策評估與分析（Worthen, Sanders, & Fitzpatrick, 1987）。12 年國民基本教育政策規劃未能：（1）採目標導向思維，針對 21 世紀國際競爭態勢，以符應國家需求、社會轉型與學習者生涯發展進行全盤性思考；（2）採既有現況取向思維，檢證數據予以分析與批判，並據以進行實證取向之興革，以及（3）依據理論與實務互為印證關聯思維邏輯，進行與時俱進之層級關聯、點滴累積（piecemeal educational engineering）之政策規劃。

### 2. 教育資源分配不均

一般而言，國民教育普及程度與品質凸顯政府關注教育力度與挹注經費財力，依據教育部統計處（2012b）資料顯示，（1）後期中等教育基礎學術、專業與職業教育結構呈傾斜狀態，其中，基礎學術教育「炙手可熱」；（2）公立學校教育多為升學軌，私立學校教育多為職業軌，公私立學校學生數比例約 1：1；（3）教育資源多集中於都會區與公立高中類別學校；（4）私立高職學生數大於公立高職學生數，前者又多為社會弱勢族群，與（5）公私立學校正式教師生態結構差異大。

## 二、建議

德國、法國後期中等教育學校類型有其歷史淵源與對應之意識型態，美國另闢蹊徑創建綜合中學，以消除教育階級分化現象。「他山之石，可以攻錯」，取長補短是原則，專業判斷是準則，以及責付**學習者之準參與決定選擇教育**。

針對上述結論，提出如下應變之道，系統化思維體現於國民教育體制結構化，教育資源問題改善，則以模組課程範式與較適教師教育補強。

### 1. 12 年國民基本教育結構化

綜觀歐美總體教育體制包涵初等教育、中等教育與高等教育；現今學制是 6+3+3+4，其中高中職教育扮演承先啟後功能，上承高等教育，下接形式普同、實質多元之基礎教育。21 世紀是終身學習與學習型社會的紀元，未來 12 年國民基本教育組織呈現多樣態，如 6+6、5+4+3、4+8、4+4+4、4+5+3 年制等，小學教育旨趣是基礎扎根、習性養成，可用年限約 4 至 5 年；綜合中學教育旨趣是試探、定性與發展深耕（Meyer，譯 1999），可用年限約 8/2+3+3 年（見表二）。

臺灣於 1968 年實施九年國民義務教育，至今已逾 40 餘年，待實施之 **12 年國民基**

**本教育不是量的擴增，而是質的提升與效益產出**。2014 年施行之 12 年國民基本教育旨在：（1）解構「考試還是考試」現象，（2）效益地發展新生代潛能與個性，以及（3）落實合時宜的教育本質。

表二 12 年國民基本教育階段目標與權重一覽表

| 年限／目標與權重／階段 | | 認知 | | | 情意 | | | 技能 | | | 總計 | 類別特色 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 小學 | 4 | 3 | | | 4 | | | 3 | | | 10 | 人境體驗教育 |
| 前期中教 | 5<br>2+3、0+5 | 4 | | | 3 | | | 3 | | | 10 | 共性基礎教育 |
| 後期中教 | 3 | 5 | 3 | 2 | 4 | 3 | 3 | 2 | 3 | 5 | 30 | 分流個殊教育 |
| 總計 | 12 | 12 | 10 | 9 | 11 | 10 | 10 | 8 | 9 | 11 | 90 | 多元化 |

資料來源：研究者自行設計

2. 實施模組課程範式

**歐美後期中等教育主全方位，一則符應多元智能理論，二則提供社會發展需多元人力資源，三則構造後現代主體意識與後工業社會多元主義；相對而言，臺灣形式是雙軌制教育，實質是單一性**，執行一名符其實的升學教育。

依據高級中學法第一條規定：「高級中學以陶冶青年身心，培養健全公民，奠定研究學術或學習專門知能之預備為宗旨。」（教育部，2010a）職業學校法第一條規定：「職業學校，依中華民國憲法第一百五十八條之規定，以教授青年職業智能，培養職業道德，養成健全之基層技術人為宗旨。」（教育部，2010b）另，符應多元需求如學習者資質、性向、興趣、就業與生涯規劃需求，後期中等教育規劃需**橫向分化與縱向層級取向的教育**。

後期中等學校定位呈多樣化，辦學機制彈性化。首先，或就全國 15 學區予以橫向校際分工、重點或特色學校發展，或採校內橫向多元化與縱向層級化；其次，規劃菜單式（menu-based）模組課程範式（paradigm of modular curriculum），據以提供學術發展、專業發展、職業發展與就業準備取向之教育；最後，**所謂明星學校，實為專長與特色學校，依學區統籌規劃設置，數量有限，責付其成為學區之學習領域燈塔**。

課程設計需兼顧普通教育與技職教育間之橫向轉換與縱向銜接，模組課程範式（見表三）是未來課程典範，其將知識類別分為基礎理論與應用知識二類，5 大學習領域與 10 個次領域，課程組織依據年級而變化，由單一領域到跨領域、系統知識結構到主題課程；課程難度分基礎、進階、探究與榮譽課程（honors courses）四級。

模組課程範式旨在：(1) 滿足就近入學而生成之多元需求；(2) 因應社會快速變化，同一時間學習與發展多元與多層級職識能成為必要，**能力分組教學與開設必選修科目是對應措施；**(3) 在網際網路社會，學習跨越教室邊界，另類學習成為常態，如自主學習、機動學習、網路學習、群組學習等；(4) 特色學校與重點學校 / 班級成為少數，多為滿足特殊需求，如數理長才、語文專業、藝術性向、科技設計等，以及 (5) 整合學區內可用與有限教育資源，統籌規劃與綜合運用之。

表三 知識類別與領域、層級課程範式一覽表

| 層級 / 知識類別與領域 | | 基礎 / 核心課程 | 進階 / 選必修課程 | 高階 / 選修課程 |
|---|---|---|---|---|
| 理論知識 | 哲學與文學 | 單元 / 冊課程 | 單元 / 冊課程 | 主題課程 |
| | 語言與文學 | | | 單元 / 冊課程 |
| | 數學與物理 | | | |
| | 數學與自然科學 | | | |
| 應用知識 | 社會與經濟 | | | |
| | 經濟與政治 | | | |
| | 科技與生態 | | | |
| | 科技與資訊科技 | | | |
| | 藝術與戲劇 | | | |
| | 藝術與文創 | | | |

資料來源：研究者自行設計

### 3. 正視教師教育

文明成就與進展非為事先設定，而是把握箇中機會，是以，執行無排他性的國民基本教育，有一定的難度，但是，適性與原創性國民教育有其根本重要性。國民教育願景實踐高素質教師教育不可或缺，教師素質對學生學習成效發揮關鍵影響（Hanushek &

Rivkin, 2004; Heck, 2007），從而**高品質與全納式（inclusiveness）之國民教育教師教育需一體規劃之**。

符應數位化與教育工程複雜性，教師教育範式進行典範轉移：

首先，思維邏輯由線性思維模式轉化為層級網狀思維模式；

其次，教師教育橫向類別分為小學、中學與技職，縱向層級分為 4 至 6 年制小學、2+3 年制前期中等學校、3 年制學術、3 年制科技與 2 或 3 年制職業；

再次，3 年制學術取向之教師教育承擔前期與後期中等學校教育，3 年制科技取向之教師教育強調其研究設計、探究與分析職識能；

複次，2 或 3 年制職業取向教師教育，一則符應社會產業結構、類別需求，其中 2 年制屬就業取向教育，3 年制高職教育是二專與四技之先導性基礎教育；二則採情境認知、操作教學，三則實施就業教育、專業基礎教育；

最後，教師教育新典範強調**多領域系統知識與主題課程意識、多元化教學模式與統觀探究識能**，以及終身學習的行動力。

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# 附錄

1. *C* 代表概念、 → 代表關聯。
2. 每一行代表概念與概念之關聯發展或概念與概念之關聯發展路徑。
3. 概念結構圖示整體概念之關聯結構，據以瞭解概念與概念關係性與邏輯性。
4. 圖一，可讀取有關國民教育、12 年國民基本教育結構與後中教育關聯結構。

| 國民教育 | |
|---|---|
| C1→C2→C11→C13→C17 | C1→C2→C11→C13→C18 |
| 12 年國教結構 | |
| C1→C3→C12 | C1→C3→C14→C18 |
| C1→C2→C14→C17 | C1→C2→C14→C16 |
| 12 年國教目的關聯構造 | |
| C1→C4→C7→C8→C14→C17 | C1→C4→C6→C9→C10→C13→C17 |
| C1→C4→C7→C8→C14→C18 | C1→C4→C6→C9→C10→C13→C18 |
| C1→C4→C7→C8→C14→C16 | C1→C4→C6→C9→C10→C14→C17 |
| C1→C4→C7→C8→C10→C13→C17 | C1→C4→C6→C9→C10→C14→C18 |
| C1→C4→C7→C8→C10→C13→C18 | C1→C4→C6→C9→C10→C14→C16 |
| C1→C4→C7→C8→C10→C14→C17 | C1→C4→C5→C9→C10→C13→C17 |
| C1→C4→C7→C8→C10→C14→C18 | C1→C4→C5→C9→C10→C13→C18 |
| C1→C4→C7→C8→C10→C14→C16 | C1→C4→C5→C9→C10→C14→C17 |
| C1→C4→C6→C8→C14→C17 | C1→C4→C5→C9→C10→C14→C18 |
| C1→C4→C6→C8→C14→C18 | C1→C4→C5→C9→C10→C14→C16 |
| C1→C4→C6→C8→C14→C16 | C1→C4→C5→C15→C16 |
| 後中教育關聯構造 | |
| C1→C3→C7→C8→C14→C17 | C1→C3→C6→C9→C10→C14→C18 |
| C1→C3→C7→C8→C14→C18 | C1→C3→C6→C9→C10→C14→C16 |
| C1→C3→C7→C8→C14→C16 | C1→C3→C6→C8→C14→C17 |
| C1→C3→C7→C9→C10→C13→C17 | C1→C3→C6→C8→C14→C18 |
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| C1→C3→C7→C9→C10→C14→C17 | C1→C3→C5→C9→C10→C13→C17 |
| C1→C3→C7→C9→C10→C14→C18 | C1→C3→C5→C9→C10→C13→C18 |
| C1→C3→C7→C9→C10→C14→C16 | C1→C3→C5→C9→C10→C14→C17 |
| C1→C3→C7→C9→C10→C13→C17 | C1→C3→C5→C9→C10→C14→C18 |
| C1→C3→C7→C9→C10→C13→C18 | C1→C3→C5→C9→C10→C14→C16 |
| C1→C3→C7→C9→C10→C14→C17 | C1→C3→C5→C9→C1 |

# *Study on development of 12 years' national basic education in Taiwan - Referring to national education systems in USA, Germany and France*

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## Abstract

One of the objectives of implementing 12 years' national basic education in Taiwan is to put educational justice into practice. However, actions are urgently needed to address the issues of the lack of adaptability and shunt in post-secondary education and the insufficiency between urban and inter-schools educational resources. This article compares the national education systems in USA, Germany and France with that of Taiwan and gives insight to the planning and development of the 12 years' national basic education in Taiwan. The aims of this article are: (1) to initiate a difference-based adaptive education as basic educational engineering for driving a "good" and "meaningful" life; (2) to acknowledge systematic division of school education and system thinking of 12 years' coherency and inclusiveness ; (3) to pinpoint that primary schools (including elementary) and junior high schools are the foundation of the 12 years' national basic education; (4) to explain the importance of teachers' education, and (5) to give recommendations for the 12 years' national basic education policy to be implemented in Taiwan in 2014.

## Keywords

12 years' national basic education, difference-based adaptive education, educational resources, inclusiveness, teachers' education

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# 新世紀後香港基礎教育的改革

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## 摘要

廿一世紀是資訊科技發達和知識爆炸的時代，在全球化情境中，各地政府推出不少教育改革以促進教育的發展；教育統籌委員會於 2000 年 9 月公佈了「香港教育制度改革建議」，對教育發展目標和改革提出建議。這篇文章整理新世紀後香港基礎教育的改革與發展，並就香港教改的成效作整體評論；除了十多年來所推行的教改和課改外，本文亦會分析中小學和幼稚園的發展，以及論述期間香港教育所面對的學生人口下降挑戰、優化教師隊伍和提倡學校自評文化等變化。

## 關鍵詞

香港教育，基礎教育，教育改革，教育發展

## 一、前言

二十一世紀是知識爆炸的時代，隨着知識生命週期的縮短、世界空間因資訊科技而縮減，越趨頻密的全球一體化經濟，使人類社會產生了很多變化。在這個變革的環境中，各地教育部門紛紛推出教育改革，以促進當地教育的發展和更好地培育下一代。在世紀轉接之間，香港教育界熱烈地進行了教育制度的檢討和教育改革的討論；經過了年多的諮詢，教育統籌委員會於 2000 年 9 月向政府提交了《終身學習．全人學習 — 香港教育制度改革建議》（教育統籌委員會，2000），提出了香港的教育改革的方向是「為學校、教師及學生創造空間，讓學生可享有全面而均衡的學習機會，從而奠定終身學習的根基

及達致全人發展」（頁 i）。自此，香港教育改革正式啟動；十多年間，教統會先後發表了四份「教育改革進展報告」，闡述教育改革七項重點工作的進展。香港特區政府除推動這份教改報告書的建議外，亦就教育的其他方面發表了不少的政策，涉及中、小學和幼稚園等教育階段，範圍包括學校管理、教師專業、語文教育和資訊科技教育等。可見，香港在新世紀的教育改革是廣泛和全面的；當中，值得香港教育界高興的是「國際權威顧問機構麥肯錫公司 2010 年底發表報告，高度評價香港教育體系在國際上的表現，並充分肯定香港教育發展的持續進步」（胡少偉，2012，頁 33）。這篇文章將整理新世紀後香港基礎教育的改革與發展，內容除了分析教改和課改的推行外，同時也會綜合十多年來中小學和幼稚園教育的主要發展，並論述同期相關的教育發展和就香港教改成效作整體的評論。

## 二、 新世紀的教改藍圖

《學習的革命》指出「世界正飛速地經歷一場革命，這場革命將像以前文字、印刷術和蒸汽機的發明那樣改變我們現在的生活；我們需要一場學習的革命，與技術、知識和通訊爆炸相適應」（Jeannette & Gordon，1998，頁 8）。面對這場人類第三波革命，教統會（2000）提出了教育改革的願景：建立終身學習的社會體系，普遍提升全體學生的素質，建立多元化學校體系，塑造開發型的學習環境，確認德育在教育體系中的重要使命，建設一個具國際性、具民族傳統及相容多元文化的教育體系（頁 4-5），並視這次教改為一項長遠而全面的規劃，以使香港教育能追上時代的需要。在報告書中，教統會批評過往香港的教育只培養少數的優秀人才，削弱了社會的公平，並表明改革方案旨在形成新的競爭理念，塑造新的競爭機制，兼顧擇優與公平。為了避免「標籤效應影響較低組別學生的士氣」（何景安，2009，頁 118），教統會將小學生升中派位組別由 5 個改為 3 個，以減少因派位組別多而引起的不公平；其後，小學升中的自行分配學位的比例，從 2007/08 年度起提高至 30%，學生申請學校的數目亦由一所增至兩所，且不受各區學校網所限制。這兩項教改措施使小六家長有較大的機會讓子女憑面試及校內成績進入心儀學校；亦可見，香港教育改革的其中一個價值是為家長提供較多的擇校機會。

在上世紀末的教育檢討中，不少業界憂慮中小學教師工作繁重，未能有效地推行教育改革；為了讓教師鬆綁，政府於 2000 年撥款為教師創造空間，讓中小學聘請教學助理、文書人員，或者僱用外間服務，讓教師可專注教學和進行拔尖補底的工作。「有關建議

於 11 月 17 日獲立法會財務委員會通過，將預留作教育改革的 8 億元中的 5 億元發放給中、小學，透過聘請額外人手或購買服務等方法，以減輕教師的工作量，提高教與學的成效」（高國威、葉建源、張國華、黃炳文、梁潔茵，2004，頁 9）。2004 年檢討報告認為發展津貼普遍受到學校歡迎；在 2005/06 年度，政府將學校發展津貼改為經常性的撥款，並增撥有時限學校發展津貼，以協助教師應付校本評核和全港性系統評估推行初期的工作，進一步減輕教師的工作量。透過新增公共財政以支持學校發展，讓教師可落實教改工作，是香港特區政府推行教改的有效策略之一。

## 三、 課改的推展與中期成效

2001 年發表的《學會學習 — 課程發展路向》報告書（課程發展議會，2001），參考了國際 21 世紀教育委員會於 1996 年指出，「學會學習既可將其視為一種人生手段，也可將其視為一種人生目的」（聯合國教科文組織總部，2001）；並以「學會學習」為香港課改文件名稱，暗喻學校教育不再是「學會知識」，學習態度和技能比學會內容更為重要。香港當年課改計畫用 10 年改革中、小學課程，為學生提供一個均衡的新課程，並將當時所有學科統整為八個學習領域；課程發展議會亦提出在首五年內透過創造更多空間、引發學習動機、落實推行四個關鍵專案、幫助學生掌握中英數基本能力和培養學生共通能力等五方面重點工作去落實課程改革。「制度政策和學校行政管理的改革，假如未能直接或間接促進教師、學校或制度層面的課程教學的設計和發展，這些改革都可算是無的放矢」（黃顯華，2001，頁 21）。為配合課改的推行，《基礎教育課程指引 — 各盡所能．發揮所長》於 2002 年出版，進一步展示落實課程改革的校本方法；尤其是對四個關鍵專案的推行有詳細說明，使各校能順利推展德育及公民教育、從閱讀中學習、專題研習和運用資訊科技進行互動學習。

在推行課改的同時，政府對評核學生的制度亦進行了改革；教育部門於 2001 年委託考試及評核局發展與推行中、英、數三科的基本能力評估。經試驗後，於 2004 年首次在小三進行全港性系統評估；至 2006 年在小三、小六和中三級作全面施行，評估項目分為中、英、數三科，主要是以筆試進行，還包括兩科語文的說話評估和中文視聽資訊評估，以全面評估學生讀寫聽說的能力。這個評估結果和資料可讓公眾瞭解基礎教育階段學生的中、英、數基本能力；學校亦可參考全港性系統評估的校本資料，調整三個主科的教學策略，以改善教師教學的效能。與此同時，正如內地學者景源（2011）指，

港府「要求實現『對學習的評估』和『促進學習的評估』兩種評價範式的平衡，變革了學校的評價文化和評價方式」（頁 17）；鼓勵教師注意促進學習的評估，可使課堂教學目標、學教過程和學生學習成果三者有一個更緊密的迴圈，從而優化課堂教學。

有關香港課改的成效，課改中期報告顯示「有超過 85% 的受訪小學生和 75% 的受訪中學生認為老師普遍有『向我們提問、與我們討論、鼓勵我們發表意見』、『耐心聆聽我們的發問及積極回答我們的問題』、『教我們用不同方法尋找資料，完成課業』，以及『鼓勵我們自己尋找答案，解決問題』」（教育局，2008，頁 20）。時任課程發展總監張國華於 2011 年指出「學生在溝通能力、創造力及批判性思考能力上有明顯的進步，在國民身份認同和承擔精神等價值觀和態度上均有正面的發展，並正發展成更加獨立的學習者。」（鄭琰，2011，頁 10）。香港課改成效亦受到本地課程專家的肯定，香港教育學院副校長李子建（2012a）認為「超過 90% 的中小學校長認為學校能夠促進教師共同備課、建立同伴觀課文化、提升校內的團隊文化和將學校作為一個學習社群」（頁 44）；並指出學校領導層和中層管理人員的素質差別是影響校本課程的關鍵因素。

## 四、 幼稚園教育的發展與提高

在 2000 年的報告書內，教統會期望政府和公眾認識幼稚園教育的重要性，並就有關提高幼稚園教育專業水準方面提出各項明確的建議，反映了當時香港幼師資格相對較低；而提高幼稚園教師和校長的資格是幼稚園教改的一個亮點。同時，教統會建議政府要加強質素保證機制和改善小一入學制度，以防止幼稚園教育揠苗助長的風氣。隨着世界幼稚園教育的發展趨勢，課程發展議會修訂了 1996 年學前教育課程指引，新編訂的《學前教育課程指引（2006）》申明幼稚園教育是終身學習和全人發展的基礎，重視以「兒童為中心」的核心價值；在該課程架構下訂有四項幼兒發展目標：「身體」、「認知和語言」、「情意和群性」及「美感」；這份 2006 年的學前教育課程指引比舊課程更為全面、具彈性及多元化，可讓幼兒建立良好的學習基礎、正面的價值觀及基本的能力與技巧。

「學前教育學券計畫」是由 2007/08 學年開始實施，一方面保留私立幼稚園靈活應變的多元化特色，另一方面則推動學前教育界全面提升質素，步入更具效益和更專業化的新紀元。在 2009/10 年度參加學券計畫的幼稚園有 820 間，幼稚園學生約 117,000 名，

分別約佔總數的 85%。這計畫雖顯示政府對幼稚園教育的承擔有所增加，但政策推出後卻受到不少業界的批評，「新政策推行至今已進入第三個學年，過程中衍生了不少爭駁，除了上述提及的問題外，其他情況諸如教師人手短缺、流動、流失和工作壓力等，均對幼稚園教育專業的整個生態發展造成嚴重影響」（袁慧筠，2010，頁 11）。立法會教育事務委員會（2010）曾召開檢討學前教育學券計畫會議，並通過議案「促請政府即時成立包括業界及家長代表的委員會，立即檢討幼稚園學費津助制度」。在議會和業界的強力關注下，教育局提前檢討這個原定推行五年的計畫；經公開諮詢和檢討工作小組的討論，教育統籌委員會於 2010 年底公佈檢討報告，在提出 12 個改善學券計畫建議的同時，該小組亦總結了學券計畫的成果。然而，大部份香港幼稚園同工的心願是政府推行十五年免費教育；為回應業界的訴求，政府終於 2013 年成立專責委員會研究推行十五年免費教育的可行性。

## 五、 香港小學教育的三大發展

香港小學教育在這十多年除了推行教改和課改的建議外，在推行全日制、落實小班教學和優化人力資源等三方面也有明顯的發展。在回歸年，特首提出把全日制學生比率提高；1998 年的施政報告提出推行小學全日制長遠的目標，計畫於 2007/08 學年開始全面推行小學全日制，讓所有小學生都有機會入讀全日制學校。2003 年《小學全日制優點研究》指出全日制在多方面比半日制可取，包括：全日制學校可以為學生提供一個更理想的學習環境和更多元化的學習活動；可紓緩緊迫的上課時間，學校能更靈活地安排課程；可提供較充裕的時間去使學生得到較全面的照顧等。「至 2002/03 學年，政府已達到了六成的小學生接受全日制教育的中期目標；據政府統計處 2007 年的統計報告顯示，84.4% 的受訪者同意或非常同意『由於學生有更多時間和老師、校長和其他同學溝通接觸，因此全日制小學就能夠營造出一個更有生氣的學習環境』」（郭少棠，2008，頁 148）。

在新世紀後，香港小學教育的一個爭議課題是小班教學的推行。教育局於 2004/05 學年進行一項追蹤性的研究，目的為評估在香港實施小班教學的好處，及識別發揮小班教學最佳成效的教學策略和支持措施；當年有 37 所小學參與研究，並以每班學生人數 25 人試行小班教學。其後，教統局於 2005 年 9 月又在收錄較多清貧學生的學校試行小班教學。隨着因學生人口下降，小學業界要求小班教學訴求不斷增加，行政長官於 2007

年施政報告公佈由 2009/10 學年起，於公營小學的小一班級開始，分階段實施小班教學，並會逐年推展至 2014/15 學年，涵蓋小一至小六所有班級。2009 年 9 月，小班教學在 65% 的香港小學順利實施；當年，教育局撥款 2 億 1 千 8 百萬元，為教師提供在職培訓課程和為學校提供代課教師。隨着「小班教學研究」於 2009 年發表，教育局再調撥 1 億元，為正在實施小班教學的學校提供為期一年的額外文憑教師職位。在 2010/11 年度，實施小班教學的小學有 318 所，佔全港公營小學 69%。

香港小學課改得到不少的讚賞，成功原因之一是政府增加小學的人力資源。政府於 2002 年 9 月在小學增設課程統籌主任的職位，以支持小學制訂課程發展策略和推行課改的工作；有見於小學課程統籌主任的貢獻，政府將這個原定五年的有限期職位轉為常額。而為加強改善中英數三個主科的教學，政府於 2005/06 年向小學提供資助專科教學津貼，為期三年；期後考慮到教師不滿以合約形式聘用，教育統籌局由 2006/07 學年起為學校提供額外常額教席，取代這個專科教學津貼，這使全日制小學每班的教師比例由 1.4 提升至 1.5。於 2008/09 學年教育局又在小學開設高級小學學位教師的職級，明確小學副校長要協助校長處理下列四方面的工作：（1）課程發展與管理，學與教及學生評估；（2）全校參與的關顧輔導與學生支持；（3）人力資源管理；（4）學校管理、評估及發展。小學副校長職級編制化，除了吸引人才出任小學副校長外，也提高了小學行政人員的士氣，有助提升小學教育的管理質素。

## 六、 中學教育的改革與轉變

香港中學教育的一個實踐性發展，是將實施近三十年的九年免費教育延長；特首在 2007 年施政報告中宣佈將公營學校提供的免費教育延伸至高中階段，由 2008/09 年度起生效。十二年免費教育不單可減少低學歷青少年過早地投入就業市場，亦有利適齡學童取得報讀進修專上教育的資格，有利他們持續進修終身學習。另一方面，因應學生人口減少，教育局在 2006/07 學年推出班級結構重整措施，為未達開辦三班要求的中學，提供多項方案供相關學校申請繼續營辦高中，以減輕收生弱勢中學被殺的危機。吸收了早前小學縮班殺校所帶來教師壓力和怨氣的痛苦經驗，教育局於 2010 年 11 月提出「自願優化班級計畫」，讓部份學生自然地流進收生不足的學校；這不但保障弱勢中學不用殺校，亦避免了能力較強的學生錯配下移。與此同時，政府將世紀初 40 名學生的中一班額逐步減少；教育局於 2009/10 學年已將中一每班派位人數調低至 36 人，在 2010/11 及

2011/12 學年再減至 34 人。政府於 2012 年底更提出二一一方案，使 2016 年的中一學生班額可減至 30 名學生；這措施不單保留中學教師的人力資源，又可免日後中一學生人數谷底回升時，引來另一次香港中學教育的動盪。

香港特區政府在新世紀最為慎重的教改政策是推行新高中學制。2000 年教統會未有決定進行高中學制改革，經過 2004 年的諮詢後，特區政府於 2005 年公佈 2009 年推行新高中學制。新高中課程為學生提供一個均衡和有深度的課程，高中生除了修讀四個必修的科目，包括中、英、數及通識教育科外，亦可根據個人興趣、性向和能力，從不同學習領域或應用學習的範疇中選讀兩個或三個科目；同時，高中生還可透過其他學習經歷，獲得德育及公民教育、體藝等的體驗，以廣闊的知識基礎去準備未來升學及就業的需要。「經過三輪諮詢後，2007 年 3 月，課程發展議會與香港考試及評核局聯合編訂的高中課程 4 個核心科目及 20 個選修科目的課程及評估指引公佈；2009 年 5 月，課程發展議會編訂的《高中課程指引：立足現在，創建未來（中四至中六）》，為學校準備和實施新高中課程提供指導」（彭澤平、姚琳，2010，頁 23）。新高中學制的改革經歷數年的諮詢和優化，其改革亦與教改藍圖主張培育學生「終身學習、全人發展」的方向一致，可算是香港改革中一個持續深入又推行成功的政策實例。

高中學制改革除影響高中各科課程和教學外，亦使中學公開考試產生了相應的變化；香港中學文憑考試取代了原有的兩個公開考試，並在各科引入校本評核和以水準參照模式彙報學生的成績。「水準參照模式中，考生的表現被分為五個等級，沒有及格或不及格的概念，每個等級附有一套等級描述。為了更準確地反映考生實際的語文水準，考評局由 2007 年起改用水準參照模式彙報考生的中國語文科和英國語文科的成績，考生所得的成績，反映出本身的知識和技能水準，不受其他考生的表現影響」（付宜紅，2011，頁 44）。而對中學教師影響最大的評核轉變是校本評核，校本評核本意是透過多元化課業評核學生在不同方面的表現，讓教師可以作出適時的回饋，從而提高學生的學習成效；但校本評核卻同時引來高中教師大量的評核工作，加上學生的學習時數不足，在第一屆文憑試舉行之後，不少關心中學教師的教育團體，要求政府和考評局即時檢討校本評核及不再按原計劃於 2016 年全面在各科內推行校本評核。

回歸前，政府訂定一刀切強行母語教學，要求各中學在初中分流為以中文或英文為教學語言，這政策備受各方的批評；當中最為詬病的是其所造成的標籤效應，把中文

中學定為二流中學。政府於 2005 年曾成立工作小組深入探討這難題，並提出維持師生和學校皆具備條件的情況下，讓中學以上落車機制去強化當時的母語教學政策；但這個不為各方支持的方案，公佈後受到不少抨擊。有見及此，教育局提出微調初中教學語言政策。「賦予學校更大的空間，使母語教學有持續平穩的發展；微調安排由 2010/11 學年的中一開始實施，學校會根據『學生為本、因材施教』的原則，採用不同模式的教學語言安排，以加強校內的英語環境，並增加學生運用和接觸英語的機會。」（教育局，2010，頁 7）。為支持中學落實這個影響深遠的微調措施，教育局於 2009 年舉辦了 16 場制定全校語文政策工作坊，同時亦調撥 5 億 9 千萬元為改變教學語言的非語文科教師提供在職培訓課程及代課老師。初中教學課程微調後，使不少中學在初中階段有一校兩語文授課的情況，增加了初中教師的教學難度，但相信措施有助中學生提高英語能力；然而，其最終成效是否物有所值，則需視乎日後學生表現才可論斷。

## 七、 香港基礎教育同期的發展

在這十多年教育變革的時期中，除了以上教改、課改和中小幼教育的發展外，香港基礎教育同步亦有三個不能忽視的發展，包括面對學生人口下降挑戰、優化教師隊伍和提倡學校自評文化；當中，最為震撼的是因學生人口的減少而帶來殺校的現象。政府審計署於 2003 年發表的第 41 號報告書，批評教統局規劃失當，浪費了十多億港元資源，並倡議減建 18 所新校舍；加上學童人口的減少，小學面臨生源不足的困難，教統局於 2003 年決定停辦小一收生不足的學校。在小一生源不足的情況下，有不少半日制小學合二為一，；教統局亦於 2005 年提出檢討建校計畫，將一些原已公佈的新建校舍停建。而因殺校出現大量的小學超額教師，教統局於 2004 年推出小學教師提早退休計畫，並擴展至非殺校的小學教師；於 2005 年受惠於特惠補償金計畫的教師有八百多名。據本地學者分析「因收生不足而聯繫到學校關閉，在 2000 至 2006 年約有 110 間小學被政府所關閉」（Mok，2007，頁 201-202）；縮班殺校對香港教育影響之廣，連台灣學者亦有關注，「教師的超額造成教師流失率的升高，顯現少子化大大衝擊香港的教育體系」（黃宗顯、劉健慧，2010，頁 173）。

在學校管理方面，新世紀後影響最大的政策是推動學校自評文化。質素保證視學組在 2002 年提出學校表現指標，既讓學校瞭解到外評人員評核的要求，也是開展自我評估的參考。在 2003 年，教育局推行「透過學校自我評估及校外評核促進學校發展及問

責」，推行這個新視學制度時正是中小學教師開始感受巨大教改壓力之際，因而引來各方對計畫的質疑和顧慮。為此，教育局聘請國際學者就這機制進行專門的研究，並肯定「外評在核實及支援自評，以促進學校持續改善方面」（教育局質素保證分部，2008，頁 19）。在總結首輪外評經驗後，教育局修訂了表現指標，《2008 年學校表現指標》把原有的 14 個範圍精簡為 8 個，又把表現指標由 29 個精簡為 23 個，使學校更能聚焦地檢視工作表現；教育局並在每個表現指標內設有一組要點問題，學校同工在撰寫發展計畫、周年計畫和周年報告時可參考這些要點問題。香港這個學校評估制度受到上海專家張民生的讚賞，「在對上一年規劃實施情況的評估報告裡，評價時像一條條列出來，相應地有詳細的評價結果呈現；對一個組織來說就是既要具備規劃能力，還要具備自我評價能力。」（沈祖芸、羅陽佳，2007，頁 17）。

香港教育另一個受好評的發展，是教師受訓率和學位率皆有升幅。中學教師的受訓率由 2001/02 年度的 87.9%，提高至 2007/08 年度的 94.2%。「而小學教師的受訓率由 2001 至 2002 年度的 90.8% 提升至 2006 至 2007 年度的 94.6%；學位率更由 2001 至 2002 年度的 49.6% 增至 2006 至 2007 年度的 80.4%」（胡少偉，2009，頁 201）。下表一顯示出香港中小學和幼稚園的師生比率在過去的改善情況，中小幼師生比例從 2000/01 年度的 18.6、22.0 和 11.8 分別降至 2010/11 年度的 15.2、15.2 和 9.8；反映政府十多年來積極增加學校教師人手的比例，為各級學生提供更佳的教育服務。2007 年 10 月特首曾蔭權更宣佈「分兩期增加公營小學及中學的學位教師比例，於 2008/09 學年將小學及中學學位教師比例分別增至 45% 及 80%，並於 2009/10 學年分別增至 50% 至 85%」（香港特別行政區政府，2007，頁 45），這個措施改善了中小學教師的就業環境和提高了教師的士氣。

表一　香港中小幼學校的學生與教師比率

| 學校類別 | 2000/01 | 2003/04 | 2006/07 | 2010/11 |
|---|---|---|---|---|
| 幼稚園 | 11.8 | 10.2 | 9.4 | 9.8 |
| 小學 | 22.0 | 19.5 | 17.6 | 15.2 |
| 中學 | 18.6 | 18.0 | 17.0 | 15.2 |

## 八、 香港基礎教育改革的評價

「麥肯錫公司發表《世界上最進步的學校制度如何做得更好》的報告，該報告考察美國部份地區、英國、智利、香港、加拿大等二十個國家和地區的教育制度，結果發現雖然二十個教育系統有不同的表現，但是卻有六個共同的干預策略：建立教師的教學技能和校長的管理技能；評估學生；改進數據系統；透過政府文件和教育法規輔助改革；修訂標準和課程；保證對教師和校長合適的薪酬結構。」（李子建，2012b，頁 9）。回顧新世紀後香港教改的發展，可發現與上述六個策略相近的例證。從另一個角度剖析，香港教育十多年來除了落實教改建議和有效地推動課改之外，亦在幼稚園教育的課程和資助兩方面有所提高；在小學方面，全日制的推行、小班教學的實施和人力資源的優化是三項較大的發展。至於中學方面，除了落實新高中學制和公開考試變革之外，十二年免費教育和初中教學語言微調也是影響深遠的教育政策；與此同時，面對學生人口下降的挑戰、優化教師隊伍和提倡學校自評文化等環節，亦是香港基礎教育在新世紀後不能忽視的變化。

在教育變革的年代，香港教育界雖有不少怨氣，但學生成績進步卻也是公認的；2006 年全球學生閱讀能力進展研究顯示，在 45 個參與地區中，香港小學四年級學生的閱讀能力從 2001 年排名第 14 位躍升至第 2 位。在學生能力國際評估亦發現，「與 2007 年比較，香港學生的數學排名保持在第三位，閱讀能力排名第四，科學第三；與前三期研究結果比較，香港學生的三項能力的整體表現有進步，閱讀表現亦明顯比前兩次好」（《星島日報》，2010.12.8）。2009 年「香港學生的數碼閱讀能力在 19 個國家和地區中排名第五，逾九成港生的基本水準達到第二級或以上水準，高於 16 個經濟合作與發展組織成員國的平均百分比」（政府新聞處，2011）。簡言之，香港學生的閱讀能力於教改和課改後在國際評比上有持續的提升。

若要分析推動香港基礎教育改革的動力，追求「提升教育質素」是香港教改、課改和眾多相關政策的核心價值。當然優化派位機制、全面實施小學全日制、提供十二年免費教育等政策則有追求「教育公平」的影子。至於增加小六家長擇校機會、進行幼稚園教育學券和因學生人口減少而帶來的競爭現象，則充滿了「教育市場化」的氣味。可見上述三個核心價值主宰了十多年來香港教育的發展。而因文章篇幅所限，此文並沒有論及香港的資訊科技教育、兩文三語政策、德育及國民教育、直資學校、教師專業發展、

校長領導、融合教育、非華語學童、跨境學童等環節的變化；這些教育政策的變化或多或少也影響了香港基礎教育在新世紀的發展，並值得有興趣研究香港教育發展的學者去深究。說到香港基礎教育改革的總體評價，教改「三頭馬車」之一程介明（2007）認為：「教育改革是不會自動在民間通過市場運作產生的，是需要政府的強力干預才會出現和成功的；從這個角度看，香港的教育改革，在這個不善於組織自己的社會裡面，能夠度過這些風風雨雨，而基本能夠維持改革的核心價值，繼續向前，也說明香港有着無可估量的生命力」（頁 14）。也就是說，香港新世紀後基礎教育改革有一定的成效，不能忽視的原因是有效的中長規劃和持續地投入資源，這保證了香港教改在這十多年來穩定地沿路前進。

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# *Educational reform on the basic education of Hong Kong in new century*

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## Abstract

The 21st century is the era of advances in information technology and knowledge explosion. Under globalization, countries all over the world are undergoing reform in education system. The HKSAR government released the Reform Proposal for the Education System in Hong Kong in September 2000 and launched a comprehensive education reform in Hong Kong schools. This article is to review the education reform and curriculum reform in Hong Kong. It also addresses the significant development of kindergarten, primary and secondary education during this period. In the same time, the Government copes with the declining student population challenges, optimizing teachers' forces and advocates of school self-evaluation. Finally, an overall comment on the effectiveness of the educational reform in Hong Kong will be given.

## Keywords

Hong Kong education, basic education, educational reform, educational development

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# *An inquiry of teachers' perception on the relationship between higher-order thinking nurturing and Liberal Studies public assessment in Hong Kong*

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## Abstract

Through a questionnaire survey of 41 Liberal Studies (LS) teachers from 40 secondary schools and interviews with 12 of them, the researcher compared the teaching processes and strategies for nurturing students' higher-order thinking (HOT). The study seeks to find out whether the LS implementation process is aligning with the aims of the curriculum. Result show that teachers have a strong tendency towards examination-oriented learning while acknowledging the focus on knowledge-based learning as the main difference of LS and its public assessment component from those of the traditional disciplines, the emphasis of the subject on the mastery of basic concepts and thinking skills and the need for the nurturing of HOT. There was widespread agreement with the operation of the public assessment design in the subject. The more experienced ones further agree that examination-oriented strategies are compatible with the development of HOT.

## Keywords

higher-order thinking, Liberal Studies public assessment, mixed method design

## 1. Introduction

Liberal Studies (LS) is a new core subject for all New Senior Secondary (NSS) students in Hong Kong from 2009 onwards. Its aims are to "*broaden students' knowledge*

*base and enhance their social awareness through the study of a wide range of issues", "enable students to make connections across different fields of knowledge and to broaden their horizons" and "foster students' capacity for life-long learning*" (Curriculum Development Council & Hong Kong Examinations and Assessment Authority [CDC & HKEAA], 2007, p.1). The Education Bureau emphasizes that the curriculum, pedagogy and assessment should be well aligned (p.123-124). However, what are the views of teachers about the LS examinations in Hong Kong? What strategies do they use to help students learn effectively? Can the public assessment paper promote higher-order thinking (HOT) learning in LS? As the chairman of Creative Teachers Association and a researcher, the author conducted a study through a voluntary organization to find out teachers' perception on the relationship between LS public assessment and the teaching and learning of HOT skills. Based on the findings, we outline the nature of LS and suggest some ideas for further research.

# 2. Literature review

The education assessment system is regarded as important as the invention of the computer, steam engine and wheel (Broadfoot, 2007, p.159). Its impact on human society is immense (Brown, Kennedy, Kerry, Fok, Chan & Yu, 2009; Cheng, 2010; Marginson, 2010; Kennedy, Chan, Yu & Fok, 2006) as the behaviour of teachers, pupils and policy makers can be significantly affected. It even shapes the choices for human life in future (Broadfoot, 2007, p.159). The implementation of assessment, including both formative and summative procedures, can affect students' performance deeply and how far the purposes of the curriculum are being fulfilled. Studying teachers' attitude towards LS public examination, guidance of students as well as the teaching and learning pedagogy involved would help us reflect the implementation of aims of the LS curriculum.

HOT is a rich concept that has attracted diverse interpretations by local and international academics (Yeung, 2012; Watkins, 2001; Wang & Wang 2011). Different scholars have different interpretations and understanding with different directions and perspectives (Fisher, 2001; Pithers & Soden, 2000; Gardner, 2006). "*A basic rule for assessment of HOT skills is to use tasks that require use of knowledge and skill in new or novel situations.*" (Nitko & Brookhart, 2011, p.223). "*Higher order thinking occurs when a person takes new information and information stored in memory and interrelates and/ or rearranges and extends this information to achieve a purpose or find possible answers in perplexing situations*" (Lewis & Smith, 1993, p.136). In general, students are thinking at a higher order if they can put forward a well-reasoned view with reference to relevant concepts, discuss an issue from various perspectives, and demonstrate analytical and argumentative skills in the process.

Moreover, HOT is a disposition for a people to pursue the meanings and nature of

life. Socrates (470-399BC) claimed that, "*Wisdom begins in wonder*." (cited Cooper, 2012). Dewey (1897) argued that education should not aim only at gaining content knowledge, but also at learning how to live. The purpose of education is the realization of one's full potential and the ability to use those skills for the future life. Pedagogical content knowledge (PCK) of LS teachers needs to be investigated (Zhao & Fok, 2012) in this context.

For instance, active learning pedagogies play an important role in enhancing higher order cognitive skills among students (Madhuri, Kantamreddi & Prakash Goteti, 2012). While the goal of issue-enquiry in an authentic context is to promote HOT skills (Preus, 2012), learning through enquiry demands that students explain, analyse, give reasons or comment about them by "gap filling" (Bartlett, 1958). Questioning, issue-enquiry, interaction, learning communities and Independent Enquiry Study (IES) are encouraged as a result. Reflective thinking, integrative thinking and deep thinking can be encompassed into HOT too (Wang & Wang, 2011). Compared with memorization and looking for correct answers, HOT seeks to develop the potential of individuality such as critical thinking, creative thinking and problem solving skills (Zohar & Dori, 2003).

> *"Liberal Studies plays a unique role in the NSS curriculum by helping students to connect concepts and knowledge across different disciplines, to look at things from more than one single perspective, and to study issues not covered by any single discipline. It is more than just about developing thinking skills and positive values and attitudes. The nature of Liberal Studies is different from that of General Education or Liberal Education in universities. It is a curriculum organization that suits the curriculum contexts of Hong Kong and achieves the learning goals identified for senior secondary education."*
>
> (Education and Manpower Bureau, 2005, p.6-7)

What does HOT mean in LS specifically? According to the CDC & HKEAA (2007), teachers can infuse HOT into the LS curriculum and help student achieve the learning goals identified for senior secondary education such as "*to develop multiple perspectives on perennial and contemporary issues in different contexts", to "become an independent thinker", "develop in students a range of skills for life-long learning, including critical thinking skills, creativity, problem-solving skills, communication skills and information technology skills*" (p.5).

LS assessment is claimed to adopt authentic assessment with hot issues and news are taken as the basis of questioning (Hong Kong Examinations and Assessment Authority, 2012). Unlike traditional examinations which emphasize knowledge reproduction abilities and low-level skills, complex thinking, personal opinions, ideas construction, and the elaboration of issues in contemporary contexts are demanded in the LS assessment.

The Hong Kong Diploma of Secondary Education (HKDSE) LS Seminar on Assessing Student Learning and the Assessment Framework for HKDSE LS 2014 (Hong Kong Examinations and Assessment Authority, 2013) highlighted the nature and development of LS assessment procedures and noted the value of using contemporary issues, problems or incidents in assessment questions. By drawing upon personal experiences and conducting issue-based enquiries, candidates can demonstrate their abilities in understanding and the application of knowledge. Based on the definitions of HOT from scholars, the government and the LS teachers' perceptions of LS learning and meaning in this paper, the author discusses and interprets the research topic during the process.

According to the above discussion and analyses, in order to help students meet the aims of the LS curriculum, HOT-based pedagogy is essential. The development of HOT skills is the core purpose of teaching and learning in LS. Teachers need PCK which is the unique knowledge of teachers (Zhao & Fok, 2012). How teachers understand the subject matter and internalise to create an effective mode of teaching will affect the realization of HOT skills learning. And how teachers understand the teaching content and knowledge to internalise individual teaching pedagogy and methodology to let students manage and understand HOT skills is crucial for knowing the implementation quality of the curriculum aims.

Research is a process of investigation. With the interpretive approach, this study was carried out to reveal teachers' perceptions. Data was collected through semi-structured interviews and a self-completion questionnaire survey. The implementation of HOT in LS was analysed from teachers' perspective and discussed with reference to the views of academics, curriculum developers and teachers.

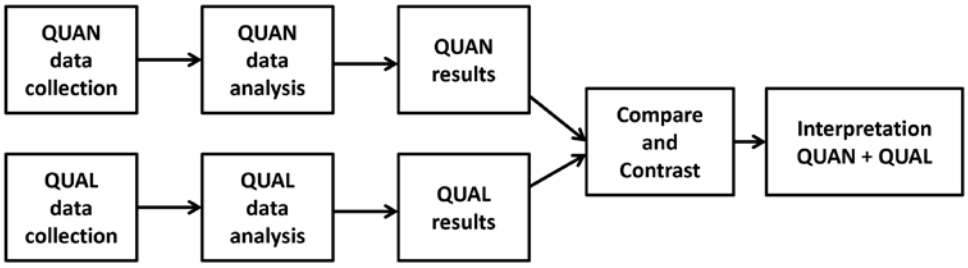
# 3. Research Design

This study aims at (1) identifying teachers' perception of the use of HOT pedagogy and the public assessment component in LS, (2) explicating the link between the two, and (3) examining the challenge of nurturing HOT in LS after four years of implementation. The questionnaire survey and subsequent semi-structured interviews were designed with the following research questions in mind:

1. What strategies are used by Form 6 LS teachers to help students achieve better results in the HKDSE?
2. How far do the teachers think that HKDSE LS can help in developing HOT skills?
3. What kinds of teaching pedagogy are adopted to develop students' HOT skills?

A single-phase triangulation design based on the Convergence Model of Creswell & Clark (2007, p.64) was used for collecting data (Figure 1). During a meeting[1] of markers in a simulation mock examination orgranised by Hok Yau Club (2012) in November, 2012, 48 copies of questionnaires (Appendix 1) without recording teachers' names were distributed to LS teacher who have attended Education Bureau LS training courses. Quantitative and qualitative methods were given the same degree of importance in seeking the answers to the research questions.

Figure 1: Triangulation Design in this study in relation to the Convergence Model




# 4. Research result and analysis

41 copies were returned and an 85% return rate was achieved. 44% of the participants have taught LS for four years or more, 32% have taught for three years, the other 24% have just taught for one or two years. Qualitative data collection was conducted by inviting 12 randomly selected teachers to a 10-minute semi-structured interview in December 2012 when they returned the marked scripts to the club. 11 interviews could be completed in due course and the responses were transcribed and analyzed[2]. Information about the questionnaire respondents and interviewees is given in Tables 1 and 2.

Table 1: Information about the respondents in the questionnaire survey

| | |
|---|---|
| Total no. of teachers | 41 |
| Gender | Male: 56% Female: 44% |
| Length of teaching LS | 1 yr: 7% 2 yrs: 17% 3 yrs: 32% ≥ 4 yrs: 44% |
| Teaching LS since 2011-12 | Yes: 66% No: 34% |
| Teaching LS since 2012-13 | Yes: 63% No: 37% |

1 In order to ensure that the LS public assessment exam marking process is fair, objective and reliable, a system of marking is established, where each of the markers only marks one exam question. Every exam question will be marked by two staff.

2 The full interviews recorded documents in Chinese can be accessed from www.cta.org.hk

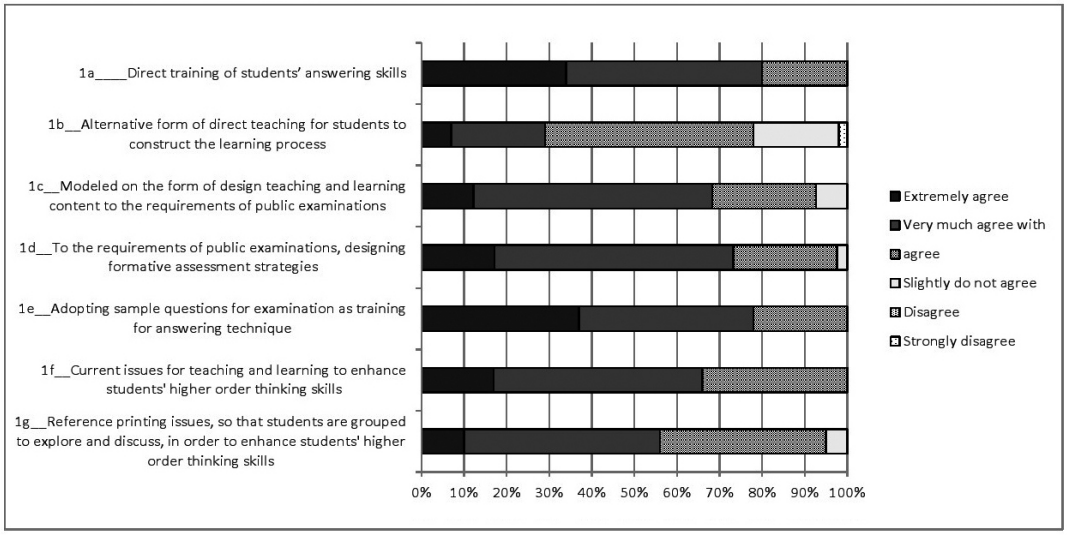
Table 2: Information about the interviewees

| **Interviewees** | T1 | T2 | T3 | T4 | T6 | T7 | T8 | T9 | T10 | T11 | T12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gender** | M | M | F | F | F | M | F | M | M | M | M |
| **NSS LS teaching experience (year)** | 4 | 2 | 4 | 2 | 4 | 4 | 3 | 4 | 3 | 4 | 4 |

**Investigative issue 1** - *What strategies are used by Form 6 LS teachers to help students achieve better results in the HKDSE?*

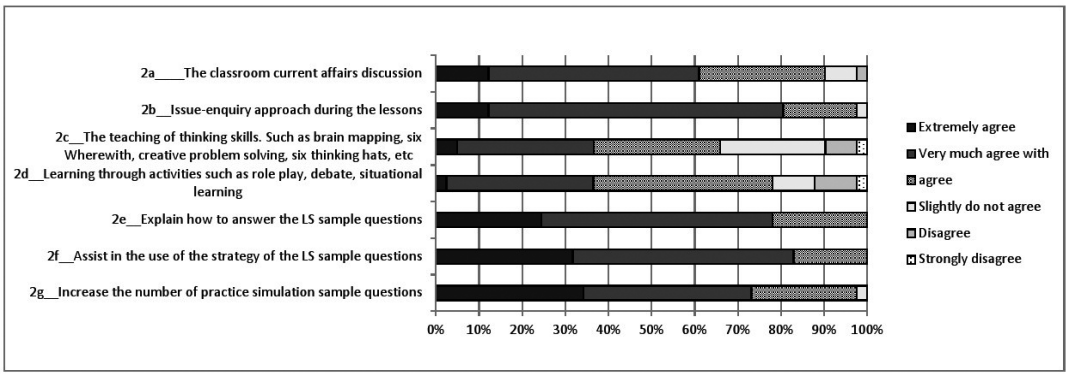
From the statistics of the questionnaires (part 1) shown in Figure 2, except item 1b, the data showed that 92% or above of the LS teachers agreed, very much or extremely agreed with using direct training of answering skills, examination-oriented practices, sample papers and current issues to help students achieve better in the HKDSE LS.

Figure 2: Teachers' views about teaching strategies




Statistics from questionnaires (part 2) in Figure 3 also showed that, except for item 2c & 2d, 90% or above of the LS teachers agreed, very much or extremely agreed that Sixth Form were more likely to use examination papers or sample questions to guide students for public assessment. Moreover, the issue-enquiry approach and current affairs discussion were preferred too. It showed that diversity teaching strategies or approaches were used for helping students obtain better results in public examinations.

Figure 3: Processes in the teaching of LS



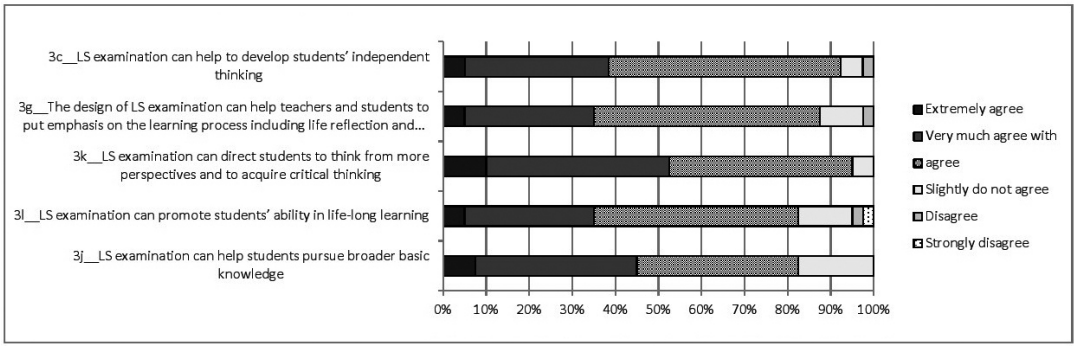

The strategies named by interviewees were well aligned with those named by the respondents in the questionnaires survey (Appendix 2). For instances, most teachers identified answering techniques as being very important for helping students perform better. Their responses focused on the training of answering techniques, use of sample questions for issue enquiry and application of constructivist concept to stimulate learning motivation and interest. For lower-ability students, one of the teachers would emphasise the memory of basic concepts and the needs for more practice.

Authentic assessment is used for LS (Or, 2012). Students are asked to perform real-world tasks that demonstrate a meaningful application of knowledge and skills. Teachers adopt different strategies to help students answer questions about current issues. They are examination-oriented on the whole and have used a wide range of strategies and processes (Appendix 3a) because of the novelty of authentic assessment procedures.

**Investigative issue 2** - *How far do the teachers think that HKDSE LS can help in developing HOT skills?*

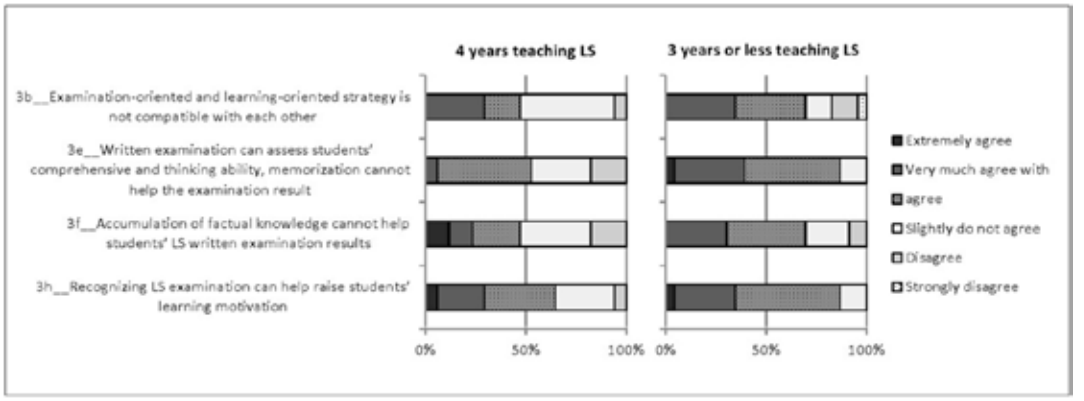
Questionnaires (part 3) in Figure 4 showed that 95% of LS teachers agreed, very much or extremely agreed "LS examination can direct students to think from more perspectives and to acquire critical thinking." 92% of them agreed "LS examination can help to develop students' independent thinking." More than 82.5% of teachers agreed, very much agreed or extremely agreed with items 3g, 3j and 3l. Nevertheless, 95% agreed that "It is more important to help Sixth Form students with test-taking strategies than guiding students to explore learning."

Figure 4: Teachers' opinions on LS (1)



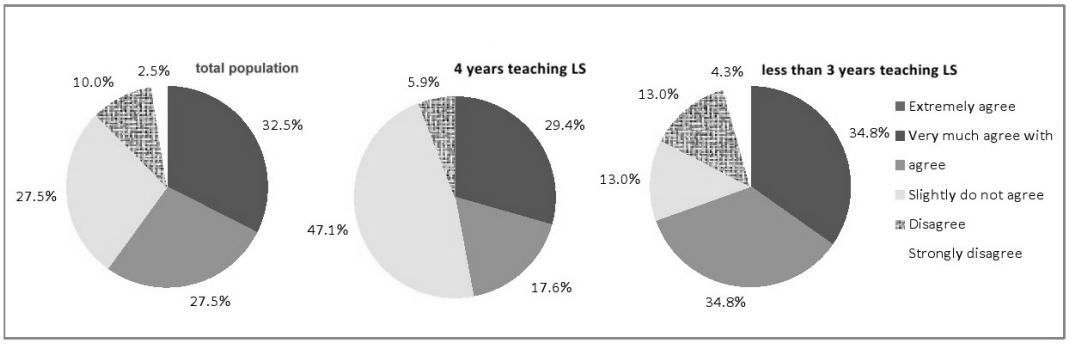

There were markedly different opinions on items 3b, 3e, 3f, 3h in part 3 between teachers with 4 years or more of LS experience and teachers with 3 years or less of LS experience as shown in Figure 5.

Figure 5: Teachers' opinions on LS (2)




A comparison was made between these two groups of teachers. More experienced teachers tended not to agree with statements like "*Examination-oriented and learning-oriented strategy is not compatible with each other", "Accumulation of factual knowledge cannot help students' LS written examination results", "Written examination can assess students' comprehensive and thinking ability, memorization cannot help the examination result" and "Recognizing LS examination can help raise students' learning motivation"*. It reflected that more experienced teachers were more likely to accept examination-oriented and learning-oriented strategy as being compatible with each other as shown in Figure 6. They were also in favour of the accumulation of factual knowledge and memorization of facts. However, almost half of the respondents held different opinions. Further research in these areas is desirable and needed.

Figure 6: Opinions on examination-oriented and learning-oriented strategy




The interviews revealed three types of opinions on whether LS public assessment teaching strategy is compatible with the nurturing of HOT skills during interviews. Feedback from the first group of teachers reflected that public examinations would hinder the development of HOT. Students were too directed towards tools for examinations and depended on memorisation for exams. Sharing opposite views, some teachers believed that the present examination model was capable of assessing the mastery of analysis, evaluation and creative thinking. Students were required to demonstrate a mastery of thinking skills and present a sound discussion based on evidence. They could not meet the criteria by only remembering facts without conceptual linkage. If examinations focus on the application of thinking skills, students also need to start learning from thinking.

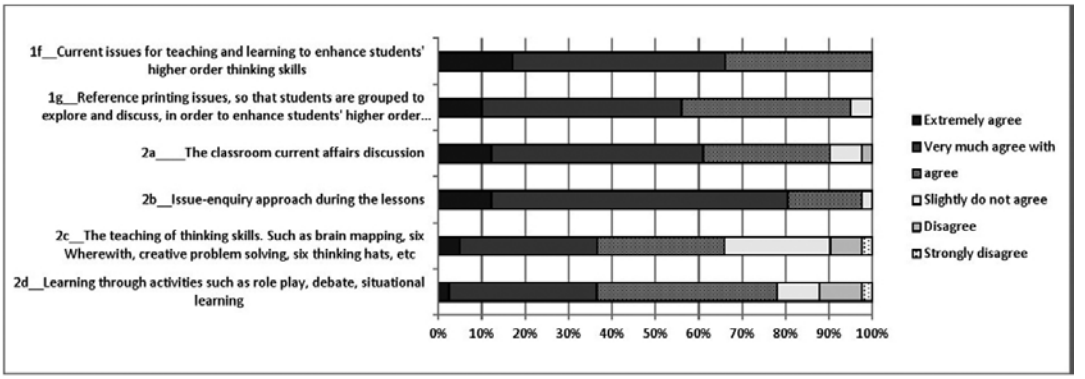
Some teachers felt that examinations could help high-ability students to develop HOT abilities but not low-ability students. Others however thought some of the thinking skills questions were too instrumental and could not help to promote independent thinking and encourage students to show their care for their living environment. Backed with confidence and strong rationales, five teachers out of eleven agreed that HKDSE LS could help students develop HOT skills during the process of teaching and learning in the lesson. Four of them considered that there were two sides to a coin. Only two of them considered it was an obstacle to the development of students' HOT (Appendix 3b).

**Investigative issue 3** - *What kinds of teaching pedagogy are adopted to develop students' HOT skills?*

HOT nurturing in LS can be interpreted as developing multiple perspectives on current issues, to become independent thinkers, and to develop a range of skills for life-long learning (CDC & HKEAA, 2007, p.5). In order to nurture HOT skills, 90% or more of teachers agreed, very much or extremely agreed with items 1f, 1g, 2a and 2b shown in Figure 7. The discussion of current issues, issue-enquiry and group enquiry are often used. 78% of teachers agreed with the need to help students learn through activities such as role-

play, debate, situational learning. 65.9% of them would use methods for the teaching of thinking skills, such as brain mapping and six thinking hats, etc.

Figure 7: Teachers' pedagogy for developing HOT skills




During the process of interview, teachers were asked about strategies, approaches and effective models and methods to develop independent thinking skills, diverse perspectives and life-long learning attitudes. Most of the teachers considered concept learning very important. The processes of discussion, interaction, argumentation or role-play through issues, current affairs or sample questions to promote analytical and critical ability, multiple-dimensional perspectives and individual thinking ability were followed in the lessons. IES was considered to develop independent thinking skills.

Moreover, one of the teachers implemented "LS is life". It is a combination of school curriculum and life experiences that help students to learn. Another recognised that teacher could nurture higher levels of thinking and analytical ability as LS is an integrated subject. Another expressed that different frames of analysis could be applied in different issues for discussion. More teachers would make use of current affairs as the basis for exploring and constructing teaching and learning content. Also they would use the sample questions as the basis for discussion from different perspectives. Teachers' responses could be roughly divided into three groups, namely the nurturing of life-long learning, development of multiple-dimensional perspectives and scaffolding for independent thinking as shown in Appendix 3c.

# 5. Discussion

### 5.1 Examination-oriented modes of teaching and learning

Most of the interviewees with more experience in LS were in favour of examination-oriented mode of teaching and learning (Appendix 1: 1c-1f). Investigative issue 1 reflected that teachers still focus on the public examination requirement and assessment-spirited

strategies to guide students for learning. This trend is compatible with the findings in many studies (Berry, 2011, p.17, cited Morgan, 1996; Preece & Skinner, 1999; Shen, 2002) that summative test requirements tend to dominate the assessment practice of many teachers. It is exactly the same as Broadfoot's worry that "the assessment tail nearly always wags the curriculum dog" (Broadfoot, 2007, p.8) as curriculum and assessment can never really be separated. The public examination is influential, high-stakes exercise because priority is often given to result (Chapman & Snyder, 2000; Fischer, Bol & Pribesh, 2011; Berry, 2011). As pinpointed in the curriculum and assessment guide, *"The most important role of assessment is in promoting learning and monitoring students' progress. However, in the senior secondary years, the functions of assessment for certification and selection come to the fore. Inevitably, these imply high-stakes uses of assessment, since the results are typically employed to make critical decisions about individuals that affect their future"* (CDC & HKEAA, 2007, p.121).

The research findings show that the examination-oriented modes of teaching and learning mode of LS are different from the traditional "pyramid assessment system" which Berry (2011) claimed would encourage students to learn factual content by rote and memorising the model answers. Investigation issue 2 found that experienced teachers such as T9 were more in agreement with the examination-oriented and learning-oriented strategy. Similar finding of Zhao & Fok's (2012), the PCK of experienced teachers (such as pedagogy for HOT teaching and learning) is significantly richer than that of novice teachers.

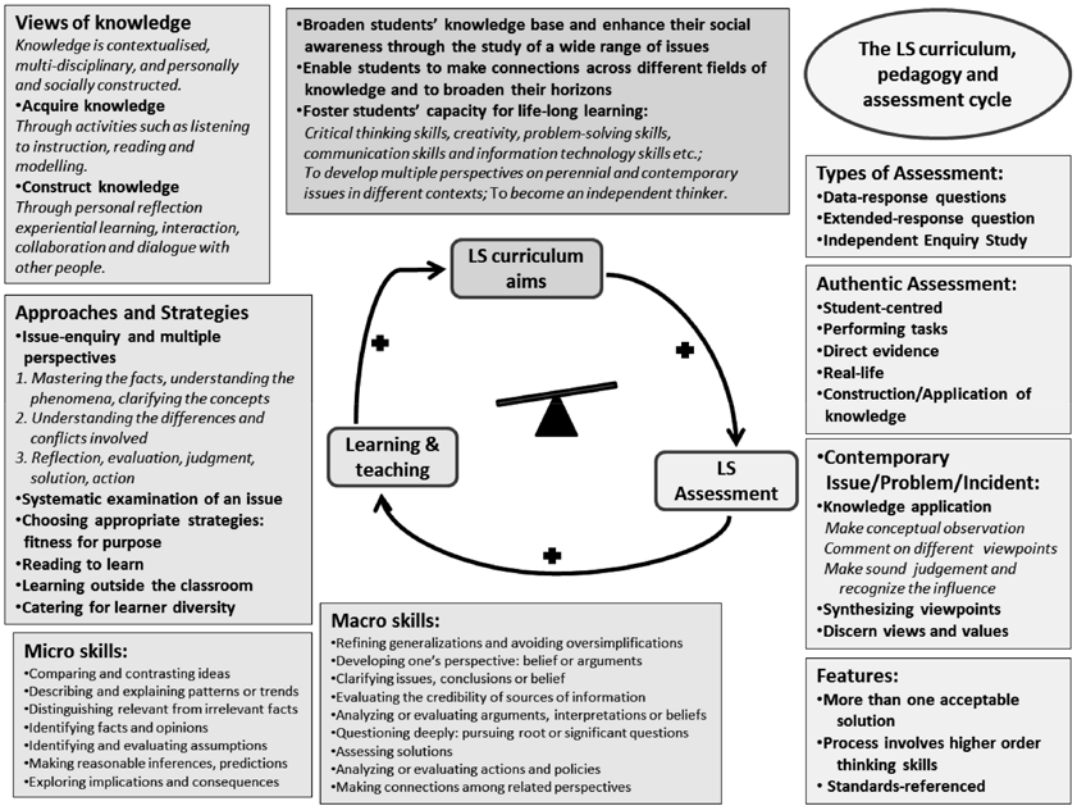
Experienced teachers have firm and rational reasons to support the nurturing of HOT. Their views are more compatible with the emphasis of the curriculum reform which recognizes assessment is highlighted as the key for learning (Education Commission, 2000; Curriculum Development Council, 2002). As highlighted in the Senior Secondary Curriculum Guide, "*assessment is an integral part of the curriculum, pedagogy and assessment cycle*." (Curriculum Development Council, 2009, 4.2.1) and assessment policies have significant impact on supporting learning process.

### 5.2 Nature and development of HOT in LS assessment

Over 82% of teachers in the questionnaire survey and 5 of the 11 in the interviews thought that the LS examination could help in developing HOT skills (Appendix 1: 3c, 3g, 3j, 3k, 3l and Appendix 3b: T4, T6, T8, T9, T10), and used a variety of strategies for this purpose (Appendix 3c). Most of them had a positive perception on the relationship between HOT nurturing and LS public assessment. They agreed that the LS public examination is greatly different from the traditional examination model in terms of mastery and understanding of concepts, investigation of issues, and perspectives of thinking strategies. Systematic steps on nurturing the learning process or whole school curriculum and the construction of similar thinking modes to stimulate learning were therefore encouraged (Appendix 3a: T7, T8, T9, T10 and Appendix 3c: T4, T6).

Actually, the blueprint of educational reform laid out in 2000 by Education Commission (2000) has led to the adoption of the policies of "Learning for life – learning through life" and "Learning to learn" The former emphasizes the building of life-long learning society while the latter (Curriculum Development Council, 2001) foster the development of independent learning (Kennedy, 2011). To realize these two aims, a paradigm shift and pedagogical changes by teachers are essential. However, in an examination-oriented city such as Hong Kong (Brown, et al., 2009; Marginson, 2010; Kennedy, et al., 2006), the format and nature of the high-stake public examination seem not conducive to such changes. Nevertheless, the issue-enquiry approach in LS encourages the learning of HOT skills for the 21st century (Pink, 2005). In order to improve assessment literacy, EDB, HKEAA, international and local experts should work together in changing the rules of the assessment game as shown in Figure 8. Double marking can improve the validity and reliability of assessment (Coniam, 2011). However, only by successfully infusing HOT into the learning and teaching process, can the aims of the LS curriculum be achieved in practice.

Figure 8: The LS curriculum, pedagogy and assessment cycle



The issue-enquiry approach and emphasis on authentic assessment that encourage students to express themselves logically, to assess, discuss and judge various issues (Or, 2012) are the characteristics of the examination design for LS. Students have to master the new features of the assessment framework including IES for school-based assessment, the use of standards-referenced grading (for three data-response questions and one extended-response question) in the written examination. Instilling HOT during the teaching and learning process is essential because it can help them analyse sensitive issues (such as the June 4, 1989 crackdown and the filibuster campaign in the legislature) *(South China Morning Post*, 2013, April 17) that may appear in the examination.

**5.3 Challenge for the implementation of HOT in LS**

Although changes to the examination can be valuable vehicles for shaping instructional practices, success is not assured (Chapman & Snyder, 2000) and its influence can be largely a perception phenomenon (p.462, cited Madaus & Kellaghan, 1993). Teachers are often unable to make the necessary changes in the classroom to improve students' performance. Most of them accept drilling with reference to past examination papers and simulated exercises in spite of believing that memorisation of facts is ineffective and realising that teacher can cause a negative impact on candidates. Others have used diverse strategies, skills and processes (Appendix 3a) to nurture HOT abilities. although they were still holding the traditional concept of viewing learning as hierarchical from lower order cognitive skills to more complex ones.

Resnick (1987) challenged the concept that "*all individuals, not just elite, can become competent thinkers*" (Zohar, Degani & Vaaknin, 2001; cited Resnick, 1987). Zohar's research finds that teachers' beliefs about low-ability (LA) students and thinking are related to their general theory of instruction. If teachers see their role as transmitting knowledge and covering the curriculum rather than guiding students in thinking and constructing knowledge, or seeing learning as hierarchical in terms of cognitive levels, they may think that HOT is not equally appropriate for LA and high-ability (HA) students. However, any students who can provide an explanation of an authentic issue or describe the key features of new data can be regarded as using HOT skills.

Although the curriculum guide has accorded priority to authentic assessment and the issue-enquiry approach to learning aligns with these aims, discrepancies among the intended, the implemented and the assessed curriculum are obvious (Cheng, 2011, p.69). As a new subject, LS has to develop and search for its disciplined knowledge and PCK. There are still lots of unknown and gaps for discovery. Research about teachers' perceptions on HOT in LS and their opinions on constraints and challenges is helpful for evaluating the implementation of the curriculum in future.

# 6. The limitations of the research

Studies on the relationship between public assessment and HOT are rare, especially in regard to LS. This study is a pioneer attempt for learning teachers' perceptions in these areas. In view of the limited source and number of participants (who might be supportive of the examinations), the reliability of the findings is limited. Broader and more in-depth evidence should have been collected with data about the impact of the examinations on students. The relatively short interviews lasting for 10 minutes each is also a limitation to understanding. All these concerns should be addressed in future studies in this area.

# 7. Conclusion

This study has adopted a triangulation design based on the Convergence Model to identify teachers' perceptions on public assessment and the use of HOT pedagogy in LS. Most of the teachers are examination-oriented although a wide range of strategies has been used to help students face the high-stake authentic assessment. The more experienced teachers thought that the examination-oriented and learning-oriented strategies were compatible with each other. And most of them had positive perception about the relationship between HOT nurturing and authentic assessment in LS.

The LS examination is different from traditional examinations. Not knowing much about its requirements, it is natural for teachers to be more examination-oriented and accord high priority to the development of knowledge and the thinking skills. They have adopted different teaching strategies or HOT skills for helping students answer issue-based questions. However, this study has found that there are different interpretations of the meaning of HOT and there may be alternative or misconceptions about it especially in terms of pedagogy. Inquiry is necessary in this regard and the limitations in research design should be addressed in follow-up studies given the fact that LS is a core subject with the aims of enhancing life-long learning, multiple-dimensional perspectives, the scaffolding of knowledge and independent thinking.

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## Appendix 1

# LS Questionnaires for teachers

1. 為了讓學生獲得通識教育科文憑試較佳成績，本學年，我運用以下教學策略：
   In order to allow students to obtain the Liberal Studies diploma test and get better results this year, I use the following teaching strategies:

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| a. 直接培訓學生答題技巧<br>Direct training of students' answering skills | 34% | 46% | 20% | 0% | 0% | 0% |
| b. 以直接教授形式替代學生建構學習過程<br>Alternative form of direct teaching for students to construct the learning process | 7% | 22% | 49% | 20% | 0% | 2% |
| c. 以公開考試要求為藍本，設計教學形式與學習內容<br>Modeled on the form of design teaching and learning content to the requirements of public examinations | 12.2% | 56.1% | 24.4% | 7.3% | 0% | 0% |
| d. 以公開考試要求為藍本，設計形成性評估策略<br>To the requirements of public examinations, designing formative assessment strategies | 17.1% | 56.1% | 24.4% | 2.4% | 0% | 0% |
| e. 採用模擬考卷及去年度考卷作應試答題技巧的訓練<br>Adopting sample questions for examination as training for answering technique | 37% | 41% | 22% | 0% | 0% | 0% |
| f. 以時事議題作教學，增強學生高階思維能力的學習<br>Current issues for teaching and learning to enhance students' higher order thinking skills | 17% | 49% | 34% | 0% | 0% | 0% |
| g. 參考坊間議題，讓學生分組探究討論，以增強學生高階思維能力<br>Reference printing issues, so that students are grouped to explore and discuss, in order to enhance students' higher order thinking skills | 10% | 46% | 39% | 5% | 0% | 0% |

2. 為了讓學生獲得通識教育科文憑試較佳成績，我認同中六學年透過以下教學過程，以提升學生學業水平：
   In order for students to get better grades in the LS Diploma assessment test, I agree with the teaching process below, in order to enhance the academic level of students:

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| a. 課堂時事討論<br>The classroom current affairs discussion | 12.2% | 48.8% | 29.3% | 7.3% | 2.4% | 0% |
| b. 課堂議題探究<br>Issue-enquiry approach during the lessons | 12.2% | 68.3% | 17.1% | 2.4% | 0% | 0% |
| c. 教授思維技巧。例如腦圖、六何法、創意解難、六頂思考帽等<br>The teaching of thinking skills. Such as brain mapping, six Wherewith, creative problem solving, six thinking hats, etc. | 4.9% | 31.7% | 29.3% | 24.4% | 7.3% | 2.4% |
| d. 讓學生從活動中學習。例如角色扮演、辯論比賽、情景中學習等<br>Learning through activities such as role play, debate, situational learning | 2.4% | 34.1% | 41.5% | 9.8% | 9.8% | 2.4% |
| e. 講解通識模擬試題範本<br>Explain how to answer the LS sample questions | 24% | 54% | 22% | 0% | 0% | 0% |
| f. 協助運用通識試題示例答題策略<br>Assist in the use of the strategy of the LS sample questions | 32% | 51% | 17% | 0% | 0% | 0% |
| g. 增加練習模擬試題的次數<br>Increase the number of practice simulation sample questions | 34.1% | 39.0% | 24.4% | 2.4% | 0% | 0% |

3. 就通識教育科，我有以下意見：
My opinion to LS:

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| a. 中六時，協助學生應試策略較導引學生探究學習更重要<br>It is more important to help Sixth Form students with test-taking strategies than guiding students to explore learning | 30% | 35% | 30% | 5% | 0% | 0% |
| b. 應試策略與學習策略有很大分別，不能相容<br>Examination-oriented and learning-oriented strategy is not compatible with each other | 0% | 32.5% | 27.5% | 27.5% | 10.0% | 2.5% |
| c. 通識教育科文憑試能夠促進學生掌握獨立思考能力<br>LS examination can help to develop students' independent thinking | 5% | 33% | 54% | 5% | 3% | 0% |
| d. 本科在學與教中採用的探究模式有助學生在筆試考卷中獲得較佳的成績<br>The issue-enquiry approach of this subject in F.6 can help students in written examinations | 2.5% | 27.5% | 50.0% | 20.0% | 0% | 0% |
| e. 筆試的重點在評估學生的理解和展示思考方法的能力，記憶與背誦無助提升成績 Written examination can assess students' comprehensive and thinking ability, memorization cannot help the examination result | 2.5% | 22.5% | 47.5% | 20.0% | 7.5% | 0% |
| f. 事實性資料的累積不一定有助學生筆試成績的提升<br>Accumulation of factual knowledge cannot help students' LS written examination results | 5.0% | 22.5% | 32.5% | 27.5% | 12.5% | 0% |
| g. 通識科文憑試考卷設計有助促進師生重視學習過程、包括生活反思與體驗<br>The design of LS examination can help teachers and students to put emphasis on the learning process including life reflection and experience sharing | 5.0% | 30.0% | 52.5% | 10.0% | 2.5% | 0% |
| h. 認同通識教育科文憑考試有助促進學生學習的動機<br>Recognizing LS examination can help raise students' learning motivation | 5.0% | 27.5% | 45.0% | 20.0% | 2.5% | 0% |

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| i. 培訓學生答題技巧而非只著重知識的掌握，將有助提升筆試的成績<br>Not only emphasis on knowledge acquirement but training answering technique which can help with the examination result | 10% | 28% | 38% | 18% | 3% | 3% |
| j. 通識科文憑試筆試的要求有助學生追求廣闊的知識基礎<br>LS examination can help students pursue broader basic knowledge | 7.5% | 37.5% | 37.5% | 17.5% | 0% | 0% |
| k. 通識教育科文憑試能夠導引學生多角度思考及批判思考能力<br>LS examination can direct students to think from more perspectives and to acquire critical thinking | 10.0% | 42.5% | 42.5% | 5.0% | 0% | 0% |
| l. 通識教育科文憑試有效促進學生掌握終身學習的能力<br>LS examination can promote students' ability in life-long learning | 5.0% | 30.0% | 47.5% | 12.5% | 2.5% | 2.5% |

## Appendix 2

# Experienced and less experienced teachers' responses comparisons

1. 為了讓學生獲得通識教育科文憑試較佳成績，本學年，我運用以下教學策略：
   In order to allow students to obtain the Liberal Studies diploma test and get better results this year, I use the following teaching strategies:

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| a. 直接培訓學生答題技巧<br>Direct training of students' answering skills | 38.9%*<br>30.4%# | 50.0%<br>43.5% | 11.1%<br>26.1% | 0.0%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| b. 以直接教授形式替代學生建構學習過程<br>Alternative form of direct teaching for students to construct the learning process | 11.1%<br>4.3% | 22.2%<br>21.7% | 55.6%<br>43.5% | 11.1%<br>26.1% | 0.0%<br>0.0% | 0.0%<br>4.3% |
| c. 以公開考試要求為藍本，設計教學形式與學習內容<br>Modeled on the form of design teaching and learning content to the requirements of public examinations | 16.7%<br>8.7% | 61.1%<br>52.2% | 22.2%<br>26.1% | 0.0%<br>13.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| d. 以公開考試要求為藍本，設計形成性評估策略<br>To the requirements of public examinations, designing formative assessment strategies | 22.2%<br>13.0% | 55.6%<br>56.5% | 16.7%<br>30.4% | 5.6%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| e. 採用模擬考卷及去年度考卷作應試答題技巧的訓練<br>Adopting sample questions for examination as training for answering technique | 50.0%<br>26.1% | 33.3%<br>47.8% | 16.7%<br>26.1% | 0.0%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| f. 以時事議題作教學，增強學生高階思維能力的學習<br>Current issues for teaching and learning to enhance students' higher order thinking skills | 16.7%<br>17.4% | 33.3%<br>60.9% | 50.0%<br>21.7% | 0.0%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| g. 參考坊間議題，讓學生分組探究討論，以增強學生高階思維能力<br>Reference printing issues, so that students are grouped to explore and discuss, in order to enhance students' higher order thinking skills | 11.1%<br>8.7% | 44.4%<br>47.8% | 38.9%<br>39.1% | 5.6%<br>4.3% | 0.0%<br>0.0% | 0.0%<br>0.0% |

Remarks: * Responses from teachers with 4 years or more of LS experience
# Responses from teachers with 3 years or less of LS experience

2. 為了讓學生獲得通識教育科文憑試較佳成績，我認同中六學年透過以下教學過程，以提升學生學業水平：

   In order for students to get better grades in the LS Diploma assessment test, I agree with the teaching process below, in order to enhance the academic level of students:

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| a. 課堂時事討論<br>The classroom current affairs discussion | 16.7%*<br>8.7%# | 44.4%<br>52.2% | 27.8%<br>30.4% | 11.1%<br>4.3% | 0.0%<br>4.3% | 0.0%<br>0.0% |
| b. 課堂議題探究<br>issue-enquiry approach during the lessons | 22.2%<br>4.3% | 55.6%<br>78.3% | 22.2%<br>13.0% | 0.0%<br>4.3% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| c. 教授思維技巧。例如腦圖、六何法、創意解難、六頂思考帽等<br>The teaching of thinking skills. Such as brain mapping, six Wherewith, creative problem solving, six thinking hats, etc. | 5.6%<br>4.3% | 38.9%<br>26.1% | 16.7%<br>39.1% | 33.3%<br>17.4% | 5.6%<br>8.7% | 0.0%<br>4.3% |
| d. 讓學生從活動中學習。例如角色扮演、辯論比賽、情景中學習等<br>Learning through activities such as role play, debate, situational learning | 5.6%<br>0.0% | 38.9%<br>30.4% | 27.8%<br>52.2% | 11.1%<br>8.7% | 11.1%<br>8.7% | 5.6%<br>0.0% |
| e. 講解通識模擬試題範本<br>Explain how to answer the LS sample questions | 33.3%<br>17.4% | 44.4%<br>60.9% | 22.2%<br>21.7% | 0.0%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| f. 協助運用通識試題示例答題策略<br>Assist in the use of the strategy of the LS sample questions | 33.3%<br>30.4% | 55.6%<br>47.8% | 11.1%<br>21.7% | 0.0%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| g. 增加練習模擬試題的次數<br>Increase the number of practice simulation sample questions | 44.4%<br>26.1% | 33.3%<br>43.5% | 16.7%<br>30.4% | 5.6%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |

Remarks: * Responses from teachers with 4 years or more of LS experience
# Responses from teachers with 3 years or less of LS experience

3. 就通識教育科，我有以下意見：
My opinion to LS:

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| a. 中六時，協助學生應試策略較導引學生探究學習更重要<br>It is more important to help Sixth Form students with test-taking strategies than guiding students to explore learning | 41.2%*<br>21.7%# | 35.3%<br>34.8% | 23.5%<br>34.8% | 0.0%<br>8.7% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| b. 應試策略與學習策略有很大分別，不能相容<br>Examination-oriented and learning-oriented strategy is not compatible with each other | 0.0%<br>0.0% | 29.4%<br>34.8% | 17.6%<br>34.8% | 47.1%<br>13.0% | 5.9%<br>13.0% | 0.0%<br>4.3% |
| c. 通識教育科文憑試能夠促進學生掌握獨立思考能力<br>LS examination can help to develop students' independent thinking | 5.9%<br>4.5% | 35.3%<br>31.8% | 47.1%<br>59.1% | 11.8%<br>0.0% | 0.0%<br>4.5% | 0.0%<br>0.0% |
| d. 本科在學與教中採用的探究模式有助學生在筆試考卷中獲得較佳的成績<br>The issue-enquiry approach of this subject in F.6 can help students in written examinations | 0.0%<br>4.3% | 11.8%<br>39.1% | 70.6%<br>34.8% | 17.6%<br>21.7% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| e. 筆試的重點在評估學生的理解和展示思考方法的能力，記憶與背誦無助提升成績 Written examination can assess students' comprehensive and thinking ability, memorization cannot help the examination result | 0.0%<br>4.3% | 5.9%<br>34.8% | 47.1%<br>47.8% | 29.4%<br>13.0% | 17.6%<br>0.0% | 0.0%<br>0.0% |
| f. 事實性資料的累積不一定有助學生筆試成績的提升<br>Accumulation of factual knowledge cannot help students' LS written examination results | 11.8%<br>0.0% | 11.8%<br>30.4% | 23.5%<br>39.1% | 35.3%<br>21.7% | 17.6%<br>8.7% | 0.0%<br>0.0% |
| g. 通識科文憑試考卷設計有助促進師生重視學習過程、包括生活反思與體驗<br>The design of LS examination can help teachers and students to put emphasis on the learning process including life reflection and experience sharing | 11.8%<br>0.0% | 23.5%<br>34.8% | 47.1%<br>56.5% | 11.8%<br>8.7% | 5.9%<br>0.0% | 0.0%<br>0.0% |
| h. 認同通識教育科文憑考試有助促進學生學習的動機<br>Recognizing LS examination can help raise students' learning motivation | 5.9%<br>4.3% | 23.5%<br>30.4% | 35.3%<br>52.2% | 29.4%<br>13.0% | 5.9%<br>0.0% | 0.0%<br>0.0% |

| | Extre-mely agree | Very much agree with | Agree | Slightly do not agree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| i. 培訓學生答題技巧而非只著重知識的掌握，將有助提升筆試的成績<br>Not only emphasis on knowledge acquirement but training answering technique which can help with the examination result | 18.8%<br>4.3% | 25.0%<br>30.4% | 31.3%<br>43.5% | 25.0%<br>13.0% | 0.0%<br>4.3% | 0.0%<br>4.3% |
| j. 通識科文憑試筆試的要求有助學生追求廣闊的知識基礎<br>LS examination can help students pursue broader basic knowledge | 5.9%<br>8.7% | 47.1%<br>30.4% | 29.4%<br>43.5% | 17.6%<br>17.4% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| k. 通識教育科文憑試能夠導引學生多角度思考及批判思考能力<br>LS examination can direct students to think from more perspectives and to acquire critical thinking | 11.8%<br>8.7% | 41.2%<br>43.5% | 35.3%<br>47.8% | 11.8%<br>0.0% | 0.0%<br>0.0% | 0.0%<br>0.0% |
| l. 通識教育科文憑試有效促進學生掌握終身學習的能力<br>LS examination can promote students' ability in life-long learning | 5.9%<br>4.3% | 35.3%<br>26.1% | 41.2%<br>52.2% | 11.8%<br>13.0% | 5.9%<br>0.0% | 0.0%<br>4.3% |

Remarks: * Responses from teachers with 4 years or more of LS experience
# Responses from teachers with 3 years or less of LS experience

# Appendix 3

## (a) The responders' teaching strategies and teaching process

Teaching strategies of the LS teachers: to guide students to know how to master the skills of answering issue-based questions, more sample paper questions practices, recitation of basic and crucial concepts, demonstration and reconstruction issue-enquiry approach of hot issues and so on. The following are some of the teachers' responses.

T1. "It is the focus of answering techniques because it is very important in LS."

T4. "It is true to write one time in the white block, to teach them how to write ideas or opinion. To try one time, two times, three times, to teach them how to write arguments. This is two kinds of training. To enhance their knowledge and answering technique need to be done at the same time."

T6. "In teaching, teachers should make use of current affairs to stimulate students' interest not just teaching knowledge from textbook. To a certain extent, teachers should teach students' test-taking skills, e.g. compared this year's questions to previous year's to find out the difference. Therefore, teaching knowledge is important, teaching answering technique is also important. After the completion of the sixth form's curriculum, to enable students to do a variety of different kinds of questions to practice is necessary."

T8. "Students need to revise this subject, but students may not apply what they have learnt… In fact, the volume of opportunities students do is not too much. That kind of practice for an exam was not enough. Students should take further steps to quote some materials and to explain based on their understanding ... If you want to be effective in a short period of time, it is necessary for exam-based repetitive exercises and to know more of the criteria of the marking system, to know how to score and how to get higher marks. Or even to memorise some key words which will help in getting higher marks."

T9. "Students expect teachers to give information a little faster, or have digested a good idea to give them. The questions will be more drills in class, even if not practicing the test questions, but also will give students test mode on certain issues due to some of the framework opinions. ... Students' learning culture is to look up to authority, or look up a credible answer they think. If they believe, they will go back, will repeatedly learn. ... A lot when the concept is difficult to construct, for example, you want the students to grasp M-type society, or inter-generational poverty, such as the concept of the discipline, and I think the teachers explaining to students would be more effective."

Teachers often use the teaching process:

T7. "To establish the foundation of skills will start from Form Four such as what perspective thinking skills are. What the concept of 'to what extent' is. More in depth issues, and focus on how to analyze, more discussion of the questions will be on Fifth Form. More examination-oriented training of exercises and practice across different units are in the sixth."

T8. "When I teach in Form Four and Form Five, I will focus on course content and subject matter first. Then I will associate different units together. I have not started to catch all the key words of the exam questions at the beginning. However, I will start to drill students on how to answer the exam questions at the end of Form Five. Both training exam techniques and to grasp the concept advocated by the LS are necessary.

T9. "More time can be spent on the process of constructing knowledge in Form Four and Five. There may be a variety of activities to help them to master the issues. Significantly in Form six, more drilling in answering techniques is in class…" On certain issues due to test mode, teachers will give students some framework views for examination."

T10. "In fact, we have slowly infiltrated some skills from Form Four. And then constantly increase and strengthen. We do not deliberately teach skills to test when the exam is coming. Usually we have to teach skills."

T11. "Class seems to do an examination question together with students, but the class content or material is a very informative process. The case constructs the entire scene as in the examination. Students face and deal with all the materials or subject matter in the classroom. They need to think and make decisions during the thinking process. The whole lesson is to repeat or duplicate the exam process, but a higher degree of complexity."

T12. "Using one LS question to associate key concepts is the strategy. Start from the beginning to say the question, (teacher) writes the topic on the blackboard. Throughout the entire class it is around this topic. Even with the introduction of some information, tell the students to talk about some concept, or explain some of the examples it is all around this topic. Usually students can learn LS exam contents and strategies in lessons. Different topics with the most appropriate analytical framework to teach …"

**(b) The responders' opinions on whether LS subject's examination-oriented teaching strategy and nurturing a higher level of thinking skills are both compatible**

Some teachers believe that the exam will be obstacles to the development of students' higher order thinking skills, because:

T1. "If the teacher puts too much emphasis on test taking skills, it will indeed be a bad influence. Will at least reduce the students' interest in learning."

T2. "They do not ask how to think, just ask how the high scores will be achieved ... (teachers) made it clear that this test, students will read. "

T3. "There are candidates who recite and memorise exercises of the HKEAA practice volume and sample papers during the simulation exam."

Three teachers to a certain extent believe that the exams will be obstacles to the development of students' higher order thinking skills because:

T3. "I figured Liberal Studies for moderate or more students can improve their independent thinking, but moderate or less students' learning is more narrowed."

T7. "There is a little paradox. Because I teach Band One students, they are more realistic. Without examination specifications to study and without proper fractions to promote them, their motivation will not be much. The exam really can compel the Band One students to pay attention to current events and to understand the social aspect. The exam can train students in multiple perspectives, but to truly be critical, there remain..."

T11. "The exam needs ways of thinking…but it is a little tool in nature. If LS wants to cultivate the kind of independent thinking and hold onto the surrounding environment caring attitude, it is not necessarily encouraging. ... Conversely, exams do not help, if there is discussion of issues in depth during the lesson, it may help students to look at issues from different perspectives and in depth."

T12. "I think it is indeed stressed on exam skills ... they rely heavily on student expression. Indeed, it is not entirely linked to nurturing multiple perspectives and life-long learning ability, but I think it is helpful ..."

Five teachers believe exams will not be obstacles to the development of students' higher order thinking skills because:

T4. "Students more now than before may be very utilitarian, but the test will still be able to give them a motive. Examination of the LS questions can help them to think about... For example one question with both for and against, they will ask if I only write the FOR side, how many marks can I get? If there is no exam to ask them to look at both sides, they may only answer the FOR side and they will not answer the AGAINST side. In order to fight for higher marks, they will think thoroughly. Therefore, exams can motivate them to learn more and learn in depth."

T6. "Thinking ladder of the Liberal Studies about the analysis, evaluation and creative thinking is higher-order thinking. Unlike the lower level which depends on copying or reciting to get answers. I think the standard of LS criteria is very high, but I think the students after a few years training, should do this."

T8. "Can really train students to think. However, most of the students' language ability is weak, it needs a lot of time in this regard to improve. Sometimes students' thinking is correct, but they do not know how to express it."

T9. "Part of the higher thinking skills is answering technique. If students can handle this well, they understand the questions and give answers clearly. Examination can test students' level of higher thinking skills. They can fully understand thoroughly and give answers carefully. Nowadays, examination is more complicated to demand students' higher level of thinking skills. It is not easy for them to take the easy route by 'Catch the Road' or recite answers. Fortunately, the exam mode is kind of complex, requiring candidates to have the skills of thinking, it is within the capacity, not in a short time you can develop. We do, the exam can reach the target of Liberal Studies."

T10. "When higher order thinking promotes multi-diversity with several angles, exams in LS in fact can obtain this. Because I've seen most of the candidates have in many ways analysed, even to the point of different stakeholders to answer. ... Because usually we apply discussion to explore, the public exam is to let you discuss and explore results written out. Taught through a consensus process in class, or with the examination as the strategy, there is not much gap."

**(c) Teachers' experiences to develop students' HOT skills**

| | | |
|---|---|---|
| Nurturing of life-long learning | T3. | "First, motivate students to read newspapers. There are some lively examples of real life from newspapers. Second, LS can also reflect the attitude of life, for example, a policy is feasible for young people. What impact? If there are such questions during examination, it is to help students to reflect on their own attitude to life, think about, and writing. It is the only way to improve." |
| | T8. | "We need to teach the basic concepts of LS. Of course, we need to direct students to discuss current affairs during the lesson to see how they give comments to the issues and associate the issues to the exam." |
| | T2. | "It is important to master the concepts. Use concepts to associate all the discussion. Explore different concepts via issue inquiry. Teach higher level of thinking skills from lower secondary form. "The most important is to be flexible. Do not be dragged by the discussion of current affairs, but direct by the conceptual discussion." |
| | T4. | "I feel higher level of thinking skills can be trained via discussion in depth during the lesson. We should let the students understand that issue. But how do they discuss? For example, if we know the causes of that issue, what is the impact of that issue? Detailed discussion should be the learning process during the lesson. There is a slogan at my school: LS is life. What they experience is LS. This subject matter may come from our living environment at any minute or even the current affairs from TV. We can get from anywhere and then fit into any single unit. If you can use Mind map, you can write anything which associates to the issue. This may be interesting." |
| | T1. | "LS cannot include all the training of how to think at school. It is mainly synthesis of all the subjects' thinking methods." |

| | |
|---|---|
| Development of multiple-dimensional perspectives | T9. "Basically, I believe the small group discussion, cooperative learning. Good organised cooperative group work will help a lot, but it depends on the effort done by the teacher. If teachers only throw to the students to think about a topic, students may not grasp this. This may be worse than directly taught. I think if the teacher organizes well cooperative learning or group discussions, teachers design the various steps, guide, appropriate materials, I believe it can lead to the construction of knowledge. Students will enjoy the learning."<br><br>T7. "There must be debate and discussion during the lesson, but the interactive activities are more important among students. If we want to train thinking in different perspectives, different people should explore the same subject in different perspectives. Guidelines will be given to them to discuss, to question, to criticise different viewpoints in groups. Questioning whether their suggestions or opinions are reasonable. LS curriculum is broad and time is limited in each lesson. There is no need for every subject to issue inquiry. It may depend on the importance of hot issues and time to look for or collect more materials before or after lessons."<br><br>T12. "We always stressed to students at different angles to see one thing. The easiest is the same anti-possible angle, and then some other aspects, such as a macro: an economic point of view, the political point of view, the social point of view, the cultural perspective; microscopic: personal basic necessities the angle, the angle of the point of view of different stakeholders, government, individuals, society, or some groups. So if he mastered these analytical frameworks or is thinking on the answer, he would have compared easily rendered to his higher-order thinking ... so that students know the different analytical framework can be used in different issues, or the contrary, the same issues to do with a different analytical framework. If he mastered these analytical frameworks or method of thinking, his ability to think critically, he sees anything that goes with these analytical frameworks." |

| | |
|---|---|
| Scaffolding for independent thinking | T11. "Through habits of scaffolding method used to help students or colleagues familiarize the subject, first observed facts, gradually penetrated into the push to higher-order observation. .... If the lesson has started from issue-based discussion of different cases, students may have interest and learn actively. In some cases students may not be interested in hearing, or on their own initiative. If it is introduced by teachers, students may have wider views and think in depth."<br>T6. "Higher-order thinking skills need to be divided into different stages to achieve. To motivate students' interest it should start in Form Four and try to stimulate their interest of this LS subject. And then they will be interested in watching news. Independent thinking skills should be learnt and taught through Independent enquiry study in Form Five. To promote students' analytical and critical ability should happen in Sixth Form." |

*All interview transcripts can be seen in Creative Teachers Association (CTA) Limited website: www.cta.org.hk

# 香港教師對通識教育科文憑試與高階思維能力培育關係認知的探求

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**摘要**

筆者以一組來自約 40 所學校的通識教育科教師為研究對象，收回 41 位教師的意見調查問卷，以及透過訪問其中 12 位教師，相互引證，從而探究現職通識教育科教師在面對本科文憑試情景下，較多採用什麼教學過程與策略，以培育學生高階思維能力，而課程的實施又是否與其課程目標一致。研究結果發現受訪教師有強烈的考試導引傾向，然而，他們對通識教育科及其公開評核試本質的理解，卻有別於傳統以學科知識為本，相反，教師較多認識到新推行的通識教育科課程評估較重視學生基礎概念的掌握與及思維能力的運用。研究反映受訪教師大體認同通識教育科公開評核試運作與及高階思維能力的培育，愈資深的教師愈認同通識科應試教學策略能與高階思維能力相容。

**關鍵詞**

高階思維能力，通識教育科公開評核，混合方法設計

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# 也要還國民教育一個公道

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## 摘要

香港因推行國民教育科而引起爭議。有反對者結合着中國大陸與香港之間的矛盾，認為這是洗腦科目。儘管在推行國民教育科上有些保留和限制，支持者相信課程既有助學生認識中國國情，也可免於洗腦之嫌。中國幅員廣大，歷史文化深厚，更與香港緊密相連。不再政治冷感的香港人不能因追求民主而「去中國化」，也要還國民教育一個公道。

## 關鍵詞

國民教育，洗腦教育，香港的政治生態，去中國化

## 導言

香港因推行國民教育科而掀起的風暴，計有於 2012 年 7 月中旬數萬人聚集，在街頭示威，以及 9 月佔領特區政府的總部等。期間特區政府一再作出讓步，最後擱置課程指引。這場風暴可說是暫告一段落，但這並不意味問題已經解決。本文期望對一些現象稍作分析和討論，並且對一些根本的概念予以較深入的考量。遺憾的是，國民教育彷彿被妖魔化了，與洗腦教育差不多劃成等號，也是時候需要還國民教育一個公道了。

## 論爭與民意爆發的背景

在應否推行國民教育科的問題上，部分人反對設立國民教育科，認為這是洗腦科

目，會毒害香港青少年的思想；也有部分是支持者，因為課程有助學生認識中國國情，還有是沉默的大多數。圍繞着國民教育科大抵有兩項核心的爭議：（1）香港應否設立國民教育科？（2）國民教育是不是洗腦課程？當一些主流報章都以洗腦來形容國民教育科後，這個說法便流行起來，令到不少香港人一聽見這科便與洗腦聯繫起來，以致爭議的理據在輿論的平台上，從未得到清晰的疏理，這是十分可惜的。取而代之的是情緒化的反應，又刺激着不少香港人對共產政權恐懼的潛意識（陳立諾，2012）。

香港回歸至今，在一國兩制政策之下，中國大陸與香港漸次融合，香港人的焦慮感卻不斷累積。在陸港融合的大策略中，似乎不能夠有效改善香港人生活質素之餘，更加間接地推高了生活成本。再加上不少人相信普遍存在的所謂地產霸權、貧富懸殊等等因素，進一步開放自由行只令到香港人更加擔憂。就在這背景之下開展國民教育科，使到不少香港人憂慮自身的價值觀和自由會隨之而消失。這些深層次矛盾一直未得以恰當處理，就是這段日子以來民意爆發的背景（馬家豪，2012）。

## 對推行國民教育的保留和限制

有學者和前線教育工作者早已指出，要國民教育科獨立成科委實有一定的困難。因為學校的上課日程早已排得滿滿，要騰出空間迎接國民教育科，殊不容易。況且，國民教育科大抵與常識科、通識科、中史科和中文科等的一些內容互相重疊，這是不爭的事實。有學者認為，德育及國民教育科在學理上根本就不行，推行國民教育也只應該在公民教育的框架內進行。特區政府仍然堅持以國民教育命名，不單與國際教育主流的趨勢脫軌，也令人擔心此科目只會聚焦在國家的層面，收窄了學生的視野（梁恩榮、盧恩臨，2012.7.18）。課程指引其中一個缺失就是假設香港是一個同質的華人社會，對於非華裔人士來說，國民教育根本不能培養他們對中國人身份的認同和歸屬感，似乎他們更需要的是世界公民的視野（梁恩榮、鄧秀貞，2012.7.18）。這些都是成立的。

## 贊同國民教育的聲音

有學者認為香港人的公民身份是一個客觀事實，應該予以肯定。如果否定這一身份則是逃避現實。反對國民教育科的人大抵是一種情緒化的反應。香港人有責任了解中國，這樣才能推動中國的進步。根據《亞洲週刊》的報道，曾公開表示支持國民教育科的學者，包括香港大學專業進修學院院長李焯芬、香港大學歷史學者陸人龍、嶺南大學教授

何濼生、中文大學教授郭少棠等（陳立諾，2012）。其他公開贊成國民教育的學者不多，就筆者在報章上所見，計有香港大學的程介明教授和李輝博士兩位、香港教育學院的甘國臻教授等。大抵有不少學者和其他社會人士是表支持的，但礙於敏感的政治形勢，也不願高調的表態。

有人指出政府不能讓步，如果讓步，就只會變得寸步難行了，以後簡單如要建造一座橋或修築一條路，也可能會遭遇到絕食抗議，政府只能每次讓步，結果就什麼都做不了（陳立諾，2012）。這也解釋到政府遲遲才作出讓步的原因。

有學者指出，不少政治領袖都以提升公民對國家效忠的意識為己任（Dawson, Prewitt & Dawson, 1977; Ngai, 2005）。學者又相信，不少國家每當觸及自身歷史的時候，都會加以美化、光榮化、甚或神話化。學者李輝（2012.9.16）指出，嚴格來說任何國家的國民教育都是某程度的「洗腦」。然而，在傳媒發達和言論自由的香港，若要進行沉悶而死板的學校教育，大抵難以達到洗腦的效果。學者甘國臻（2012.10.30）認為，當局提出的課程指引，已凸顯出討論爭議性課題的重要性，並且告誡老師，不應在課堂上迴避討論這些具爭議的問題。因為這才可於課堂上引發出一個生動及熱烈的討論，這樣又怎算得是「洗腦」呢？

若仔細和持平地分析新科目提出的具體課程，新學科着重個人發展，以及建立心繫國家、關懷中國歷史和成就的文化身份，內容亦可結合與《基本法》、民主、人權、法治、國家象徵等有關內容的政治議題。這都與國際一貫做法相符，也不具爭議性。時至今日，很難想像會有一個社會還可以不以積極裝備年輕人為己任，以配合未來社會的發展。學校本身就是培育學生成為良好公民最適合的地方，社會也需要為他們提供這個學習機會（甘國臻，2012.10.30）。

對於「會否身為一位中國人而自豪？」這個問題，是主觀和個人化的。然而，中國有五千多年的歷史文化，乃四大文明古國之一。在九百六十多萬平方公里的土地上，共有五十六個民族，豐富多姿。這個國家曾經有過光輝燦爛的文明、輝煌的歷史，乃是很難在地球上其他的角落找到的。當然也有被列強欺凌、軍閥割據、抗戰和內戰等等的苦難歲月。在中國歷史科早已不再是中學階段的必修科之後，我們很難期望年青人對中國悠久的歷史有深入的了解。另一方面，一般香港人對中國的地理實在是一無所知的。在

1997 年之前，香港作為英國人管治的殖民地，政治上固然與深圳河以北的政權割裂；在教育課程上，殖民地政府刻意將中國的元素減到最少，比如中國歷史科會避開敏感的現代史階段；地理科方面，中學生可能會研讀澳洲、美洲及歐洲的地理，但卻不會研習中國的省份和相關的地理知識。

老一輩的香港人每當講述國家民族苦難之時，仍會眼泛淚光。新儒家的幾位大師如錢穆、唐君毅、徐復觀等都曾在香港生活及講學，他們對近代中國的苦難有深刻的認識與感受，對中華民族命運有一種強大的使命感，要肩負中華民族復興的重任，使中華文化不至於花果飄零。香港從來都是中國人認識自己國家民族最有利的地方，因為有言論自由，也不受制於國共兩黨鬥爭導致的扭曲（《亞洲週刊》，2012）。

具體來說，香港與中國大陸的關係越來越密切。而正在崛起的中國，其一舉一動時刻影響着全世界，也影響着香港。而香港卻是中國的一部分，既是屬於「兩制」，也屬於「一國」（程介明，2012.9.28）。

## 香港現在的政治生態

在九七回歸之前，香港人從來都是政治冷感的。又有人形容香港人是經濟動物（Ngai, 2005；梁恩榮、倪紹強，2011）。由於是殖民地，國民身份模糊，有人形容香港為「借來的地方、借來的時間」。然而，時移世易，香港的政治生態出現了結構性的轉變，香港人很着意尋找和塑造自己的身份，果敢地為着不同的訴求和議題發聲，香港人不再政治冷感了。某程度而言，這是一種進步。然而，不少香港人在尋找自己身份的同時，漸漸對發生於中國的種種現象不滿或質疑起來。兩地的情況不同，價值觀是很有差距的。其實，香港人在回歸前後，在文化上一直是認同中國的；但對不少人而言，回歸後要與由共產黨主領的政權認同，確是有困難的。這當然與已習慣了中共管治的內地人和新來港的同胞，有頗大的落差有關。筆者也對國內不少現象感到失望和憂心。近年來，香港興起一些諸如「來生不做中國人」的論調，更有人認同殖民主義的崇拜，或者在群眾集會時高舉英國的米字旗、殖民地的龍獅旗等。近年似乎有一種奇異的潛臺詞：香港要民主，就要與中國大陸切割開來。將香港和中國大陸對立起來，認為香港的一切都比中國大陸優越（《亞洲週刊》，2012）。這並不是理想的趨勢。

## 總結

有論者堅持只可以在公民教育的架構下推行國民教育，其實兩者也有相互重叠之處，而兩者也不可偏廢。再者，切實推介國民教育的力度不足，語焉不詳，而整個討論又受到過度政治化的氛圍所騎劫、傾向民粹的傳媒所誘導，實屬不幸。而整個論爭卻凸顯了一系列的問題：香港人對自己身份的矛盾——既有濃厚的本土身份意識，卻要漸次更牢固的體現國民身份的認同。而反對國民教育者要知道，許多沉默而不表態者，大抵與他們對此課題是有不同見解的，更遑論身在國內的人士了。

不少人對反對國民教育的抗爭是表示支持的，也相信他們是出於良好意願（李展華，2012.9.28）。但有學者卻認為，為了一本粗劣的國教手冊便抗拒國民教育科，進而踏上疏離國家民族的道路，乃是純真的失誤（楊志剛，2012）。筆者很同意這個觀點：香港要推動民主，但不能夠陷入「去中國化」的窠臼之中，香港不能贏得了民主，卻失去了中國（邱立本，2012）。筆者不會執着定要設立獨立的國民教育科，也認同重振中國歷史教育也可以是可行之法。然而，對中國國情如此陌生的莘莘學子，也實在需要更多和更好的國民教育。其實政黨不等於政府，政府不等於國家。政黨和政府都可以更換，國家卻是永存的。然而，不知怎的，反共輾轉變成了反華，複雜的議題却被簡單化；國民教育就是不好；中國就是落後而腐敗的化身（《亞洲週刊》，2012）。但是，香港不能像倒洗澡水的，把珍貴的祖國丟棄。也需要還國民教育一個公道。

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# *Be fair to national education*

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## Abstract

There has been a great debate concerning the implementation of the national education. Given there are gaps between the mainland and Hong Kong, the opponents claim that it is a kind of brainwashing education. Albeit that there are constraints and reservations for implementing national education, the supporters think that it is good to know more about China, and without being indoctrinated. China is such a great country, with rich historic cultures and being so closely related to Hong Kong. Hong Kong people, who are no longer apolitical now, should never abandon China, when striving for democracy. We should be fair to national education.

## Keywords

national education, brainwashing education, political atmosphere of Hong Kong, desinicization

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# 在教學法與社會實踐之間：教師如何在校本課程中引入口述歷史教學？

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**摘要**

近年，口述歷史開始受到香港中學教師的重視，口述歷史的社會意義亦使歷史教育突破學科邊界，成為跨科目的專題研習方法。然而，教師要將口述歷史教學引入既有的校本課程，面對多重的限制。本文將會以兩位嘗試推行口述歷史教學的教師角度，分析學校的課程取向、教師的教育理念、實際的處境如何影響口述歷史教學的實踐。

**關鍵詞**

歷史教育，口述歷史，課程取向

## 甲、 研究背景

過去十年的課程改革壓縮了歷史科的生存空間，但校本課程發展的空間和彈性亦為歷史教育帶來生氣和活力。就以筆者的經驗為例，從 2005 年開始，筆者以「同心圓」模式將學校的初中中國歷史科及歷史科統整為歷史與文化科。2009 年開始引入口述歷史研習，與初中學生一起進行粉嶺戲院及粉嶺農村的專題研習（朱耀光，2012）。筆者於 2012 年 9 月借調到教育局中學校本課程發展組，嘗試推動口述歷史教學，幫助教師將口述歷史加入到校本課程。雖然香港教師開始重視以口述歷史為教學方法，但口述歷史教學和校本課程發展的關係仍在摸索階段。究竟，口述歷史研習只是教學法的創新，還是課程取向的轉變？口述歷史應該以專題研習的形式進行，還是融入課堂教學之中？

## 乙、 口述歷史作為課程內容的回顧

扼要回顧口述歷史與中學歷史課程發展的關係，有助分析口述歷史對課程組織的影響。歷史學一直被視為傳統的學科（discipline），歷史作為中學科目（school subject）的發展亦受著歷史學術發展的影響（Stengel, 1997）。十九世紀以降，德國蘭克學派的興起，令實證研究成為風尚，歷史研究亦務求「客觀」，追尋歷史事件的真實性成為歷史學家皓首窮經的動力，中國史學家傅斯年便說過史學即史料學，史料搜集與考證成為歷史研究的專業印記。經由歷史學者書寫 / 生產的「客觀」歷史知識，成中學歷史教育的學科內容。大多數歷史教師的任務，就是將「歷史知識」有效地轉遞給學生（吳翎君，2004）。

然而，隨着教育理論的發展，以學科知識為本的歷史課程已受到嚴重的挑戰。例如，受到皮亞傑的啟發，部份歷史教育學者相信兒童亦能透過故事發展歷史抽象思維，歷史教育應該更強調抽象思維能力而非貌似客觀的歷史知識（吳翎君，2004）。湯普森（Paul Thompson）於 1978 年出版的《過去的聲音》（The voice of the past: Oral history）更全面挑戰以文獻研究主導的歷史學術研究。他開宗明義說，「所有歷史最終都視乎其社會目的」。口述歷史，不單是歷史研究法的改變，更是歷史知識論的範式轉移。歷史知識與社會意識密不可分，口述歷史令本來被遺忘的社群、或隱身在主流歷史論述的群體，得到發聲的機會（Thompson, 1978；鍾寶賢，2000）。口述歷史始終以人為歷史的主體，研究者透過提問、對話，以「交談說故事」（conversational narrative）的方法，取得歷史資料，將不同的聲音、特別是文獻中沒有記錄的聲音放回過去的時空脈絡（嚴佳芳，1995；楊祥銀，2004）。從上可見，歷史已不再是純粹的學術科目，口述歷史的出現，已經預示了歷史學重回人文關懷和社會實踐的進路。

或許有人認為，口述歷史只是歷史學術界風波裡的茶杯，對中學歷史課程的影響有限。不過，觀乎美國歷史教育的發展，從湯普森在《過去的聲音》為口述歷史教學打好理論基礎之後，美國中學紛紛推動口述歷史研習開始，鄉村學校更積極以口述歷史推動社區研習。就以狐火計劃（Foxfire）為例，口述歷史活動以燎原之勢，掀起歷史教育的改革，多篇學生作品刊登於狐火學刊之內。美國歷史學者 Neuenschwander（1976）預期，口述歷史會在七十年代便會成為歷史教育的主流（頁 7）。雖然 Neuenschwander 的預期至今仍未實現，但口述歷史教學已經開始得到教育界的重視。香港歷史教育學者楊秀珠

（2002）研究 210 位中學歷史科（準）教師及小學常識科（準）教師後，發現教師對香港歷史的理解，很接近日常生活的歷史。她指出：「教師的歷史觀及本土史的觀念，直接影響歷史教育的面貌，因為當我們鼓勵教師建立自己對本土歷史的看法時，亦同樣希望學生開拓自己的歷史觀」（頁 41）。她鼓勵學生以口述歷史的方法，訪問自己的家人關於日治時期香港的情況，又或者訪問父母，調查他們對六四的看法，她稱這種歷史教學為學生的「聲音」。而「歷史教育工作者可以在私人與公眾、微觀與宏觀、主流與邊緣、主觀與客觀、口述與文本、主幹與旁枝、常規與異數、平凡與出眾之間，去推展歷史想像力的極限」（頁 55）。從此可見，關於口述歷史教學的討論，已經從學術界延伸至學校的歷史教育中。

口述歷史教學不單帶動了歷史科的變革，也促使跨學科的研習。例如，美國社會科（融合課程）便採用口述歷史，讓學生認識社區的地理位置及變遷，台灣的鄉土教育及社區學習課程紛紛運用口述歷史方法進行教學活動（Dunaway & Baum, 1984；吳翎君，2004；林慈淑，2007）。類似的口述歷史專題研習亦在香港出現，香港中華文化促進中心從 2002 年開始，便為教師及學生舉辦口述歷史工作坊，亦有以大澳、屏山和灣仔社區為研究對象的口述歷史教育計劃。香港大學亞洲研究中心亦從 2001 年開始推動「香港口述歷史檔案計劃」，至 2006 年開展「香港記憶」，其延伸部份即「記憶校園」，協助師生以口述歷史方法整理學校歷史（王惠玲，2010；陳潔華，2004）。

## 丙、 研究目的

關於口述歷史的優點和重要性，坊間已有大量文獻討論。不過，當教師接觸有別於慣常使用的教學法時，若能展開課程的對話，尋找口述歷史教學與學校課程的關係，最終不論教師是接受還是拒絕，都能體現校本課程的民主精神（鄭鈞傑、林智中，2006）。對中學教師而言，口述歷史教學是教學法的創新，還是更根本的課程取向的轉變？在學術理性（academic rationalism）為主流的學校課程中，教師又如何調適口述歷史教學的社會取向，以配合校本課程的要求（Cheung, 2000；Cheung & Wong, 2002）？為了探討以上的問題，筆者邀請了兩位即將開展口述歷史教學的教師參與是次研究。兩位受訪教師，都是教育局中學校本課程發展組歷史科教師網絡成員，他們曾參與該網絡舉辦的口述歷史教學分享和工作坊，並表示會在學校推行口述歷史教學。[1]

是次研究主要以半結構性訪談（semi-structured interview）了解兩位教師如何因應校情將口述歷史教學加入校本課程。筆者於 2012 年 10 月開始就口述歷史的教學問題與兩位教師討論，並分析與口述歷史相關的課程組織原則，兩位教師亦於 2012 年 11 月底擬定口述歷史的教學安排。於是，筆者於 2012 年 12 月中分別訪問了兩位教師，訪談時間約四十五分鐘，訪談錄音後由筆者轉譯為文字，再由兩位教師檢視訪談譯稿，給予回饋。

教師甲是高中歷史科科主任，是一位未足三十歲的年青教師，在調景嶺一所直資中學任教，學生多來自中等收入的家庭。他在外國的大學主修歷史，回港後以兼讀方式修讀教育文憑，亦主修歷史。他有五年的教學年資，在這所學校任教第五年，他主要任教高中歷史科及初中通識科。去年教育局課程發展處曾到訪他任教的學校，建議學校可增加初中的歷史元素，所以他未來要負責將更多歷史科的課程內容加進初中通識科。近年，他亦積極參與歷史教學的交流活動，先後參加了教育局資優教育組的人文教師網絡及中學校本課程發展組的歷史教師網絡。

教師乙是資深教師，大學時主修體育，副修哲學，1999 年入職時在小學任教中文、數學、常識和體育科，亦曾於中學任教中文科和體育科。他曾修讀中文科的教育文憑、中文系碩士和文化研究碩士課程。在 2009 至 2011 年期間，他辭去教席，參與土地保育工作。2012 年 9 月得到天水圍一所津貼中學校長的邀請，成為半職教師，教授高中通識科及初中歷史與文化科。由於該校的學生大部份屬於第三組別，教師透過不同的教學形式提升學生的學習動機，包括成立耕種小組，讓學生在校園的農圃中實踐農務。

# 丁、 發現與討論

## 一、 教師普遍認同口述歷史教學的社會意義

Cheung & Wong（2002）的研究發現，香港教師的課程取向多元化，甚至出現強大的張力，其中學術理性、思維過程、社會重構、人本主義及科技取向交替影響教師的課程設計（頁 242）。在訪談過程中，筆者發現兩位教師對口述歷史都有充份的理解。教

1 承蒙高級課程發展主任梁寶芬女士提供網絡活動資料及聯絡受訪教師。

師甲閱讀了很多外國、尤其是台灣的口述歷史文獻[2]，而教師乙也讀過大量口述歷史著作[3]。他們並不會將口述歷史單單視為訓練學生歷史思維能力的方法，還很認同口述歷史的社會意義。他們對口述歷史的理解，很接近 Cheung & Wong（2002）所指的社會重構（social reconstruction）取向。教師甲希望學生藉著口述歷史研習了解調景嶺的過去，並關注都市化對社區與社群的影響。他說：

> *「口述歷史有其對象，就是讓同學訪問當時人，那些是真真正正曾經發生在社區的事情，在我們這個社會中發生，那些事情也可能是一些轉變。我們周遭發生的生活，就是歷史。」*

教師乙也希望學生藉着口述歷史研習，關注香港的農地及農業問題，並質疑政府為發展而扼殺農業的政策。

然而，在深入的訪談中，筆者發現教師甲和教師乙的後設課程取向（meta-orientation）還有些微差異（Cheung & Wong, 2002）。雖然兩位教師都希望借助口述歷史研習將學生的學習連繫到社會生活，但教師甲坦言，高中的歷史課程很着重考試和思維能力，但歷史教育真正感動他的，是「讓學生在歷史科認識這個世界……發現人類的厲害之處。」台灣歷史學者林慈淑（2010）的《歷史，要教什麼？》說明了歷史教育在學科知識、歷史思維能力和人文向度之間的張力，在公開考試、課程要求和時間限制之下教師在課程內容上都必須有所取捨。所以，為了調解「思維能力」和「人文關懷」的張力，教師甲只好在高中歷史課程的校本評核部份加入口述歷史教學，這種處理方式，一方面可以配合課程要求，訓練學生搜集史料、整理史料的能力，又能在過程中培養學生對社會的關懷。

教師乙的後設課程取向則較純粹，這與教師乙的背景息息相關。首先，教師乙具備中、小學的教學經驗。Yeung & Lam（2007）指出，香港小學教師比中學更願意嘗試統整不同的學科，他也直言：

2 教師甲在閒談間也時常分享台灣歷史學者張元老師對歷史教學的看法。

3 教師乙認為《又喊又笑：阿婆口述歷史》是口述歷史研究的典範。

*「我並非歷史出身，我欠缺的只是知識，但我很清楚歷史的意義。……其實我並不關心學生是否在公開試取得好成績，我只想讓學生認識社區和自身的關係。」*

非歷史專科出身，令他免去不少學術的包袱。另外，他的學術背景亦很摻雜，語文教育出身，後來兼讀文化研究碩士課程。

根據 Shriner, Schlee & Libler（2010）對不同學科教師的研究，發現語文教師比較願意與其他學科的教師合作統整課程。這或許解釋了為何主修中國語言及文學的教師乙，能夠專注於口述歷史的社會取向。他表示，在參加土地保育工作的時候，已進行兩次口述歷史的研究，他認為「小歷史」也是一種文學修辭方法，以彌補「大歷史」的不足。因此，不論任何科目，他都會在任教的高中的通識科和初中歷史與文化科加入口述歷史研習，帶學生到上水的農村考察、與村民訪談，讓學生了解都市發展對香港農地帶來的影響。

從上可見，口述歷史的課程取向充滿彈性，教師既可將口述歷史研習視為歷史能力的培訓，亦可將口述歷史變為跨科的專題研習。歷史出身以及學科的要求，令教師甲不斷在學術要求和社會取向之間摸索，而非歷史主修的教師乙則較無拘束地在不同的課程推行口述歷史教學。不過，正如 Cheung（2000）所言，課程取向與課程實施之間仍有一定的落差，教師甲和教師乙能否真正落實口述歷史的歷史思維培訓和社會關懷，仍有待研究。

## 二、 從口述歷史教學開始摸索跨學科合作的可能性

雖然筆者沒有以強度抽樣方式選擇訪談對象，但本研究的兩位參與教師都具有代表性，教師甲的學校開辦初中通識科，而教師乙的學校開辦初中歷史與文化科，這些安排大致參考了課程發展議會（2002）的建議：

1. 將個人、社會及人文學習領域內的學科，統整成綜合人文科[4]，中國歷史科保持獨立；

4 雖然教育局並不建議學校將初中的統整課程命名為「通識科」，但有部份學校為了與高中的課程銜接，仍把初中的統整課程稱為通識科。

2. 以中國歷史為主軸，統整中國歷史科及歷史科為歷史與文化科，其他學科統整為綜合人文科。

根據外國推行口述歷史的經驗，如果教師甲在初中通識科加入口述歷史教學，應更能發揮口述歷史的社會實踐意義。另外，教師乙除了在高中通識科外，如何將初中的歷史與文化科開展口述歷史課程？

教師甲雖然認同口述歷史的社會向度，但他認為在初中通識科中推行口述歷史比較困難。他說：

*「創校時初中通識科只為了銜接高中通識科，所以沒有很多人文學科的課程內容，直至新高中開辦人文學科為選修科，才滲入人文學科的元素，我現在負責將歷史的教材加入初中通識科。」*

他更表示，初中通識科實際上是在不同的時段學習不同的學科內容，學科內容之間並沒有連繫。運用 Tyler 對課程統整的定義，這種組織方式只算是廣域課程，不同的學科內容並未在共同的課程組織原則和關係（林智中、陳健生、張爽，2006）。教師甲表示，初中通識科的香港單元是經濟科的同事負責，所以他未能在香港的單元加入口述歷史教學。至於他負責編排的歷史內容，則是以順時序方式組織課程內容，主要教授古代文明至工業革命的部份，也是口述歷史無法處理的時段。

至於教師乙任教學校的初中歷史與文化科，亦以順時序方式編排課程，但課程以中國歷史為軸心，並以「思維能力」組織學科內容。這種課程組織大致參考了教育局課程發展處（2007）提供歷史與文化科的課程綱要，「以中國歷史為主線，整合中國與世界歷史與文化」。不過，這種強調思維能力的比較歷史課程，忽略了香港史內容，與教師乙的社會重構課程取向有明顯的不同。教師乙如何處理在校本歷史與文化科加入口述歷史教學呢？他說：

*「我在每一個課題都會引入農業和食物議題，例如我在四大文明和中西方帝國的課題中，都加入農業和食物的內容，從而建立學生的生活和知識的連繫，而我在香港農村做的口述歷史便和農業和食物有關。」*

雖然課程以思維能力作為組織學校內容，但教師乙卻以農業和食物重新演繹課程內容，令課堂連繫至學生的日常生活，亦因此找到加入口述歷史教學的課程切入點。

本來，校本課程統整應能給予教師引入口述歷史教學的課程空間，不過，從兩位教師的訪談得知，校本課程統整仍以學科主導（discipline-oriented）、思維能力和學術理性取向，教師並不容易在課程規劃（planned curriculum）的層面參與統整工作，所以，他們只能在課堂和個人層面將口述歷史加到課程之中，這亦限制了口述歷史的教學成效。

### 三、 以務實方式推動口述歷史教學

雖然課程統整未能即時為兩位教師提供實踐口述歷史的空間，但只要教師認同課程理念，總能務實而漸進地帶來改變，正如 Park（2008）所言，關於課程統整的研究太集中分析統整理想與現實的落差，卻未能肯定教師以務實方式（pragmatic approach）取得統整的最大成效。

由於教師甲是歷史科主任，他可以自主編排歷史課程，將口述歷史研習用作校本評核課業，增加口述歷史課程的認受性，他亦尋找教育局中學校本課程發展組的支援，以取得外來的助力。至於初中通識科方面，他說：

> *「有歷史科訓練的同工較少，他們亦沒有接觸過口述歷史，我亦要自己去體驗，及去思考課程發展配合在哪一個範疇。我不知道科組同事是否願意共同開發。所以，我會以高中學生的口述歷史研習成果及專業支援換取同事的認同。」*

這種務實取向有別於由上而下的課程發展，教師先從實踐層面取得學習成果，然後再以「調景嶺口述歷史研習」的成果建立同事間的課程對話，然後再探討「調景嶺社區」能否成為初中課程的主題，這種由學習者開展的課程對話，才能落實課程統整的精神，將由不同科目集合而成的廣域課程轉變為跨科課程（interdisciplinary curriculum）。

身為半職教師，教師乙明白自己在學校體制中的限制。教師乙一直表示會在高中通識科引入口述歷史的研究方法，指導學生以香港農村與農業為題進行中學文憑試獨立專題探究（Independent Enquiry Study）。然而，在本研究進行期間，教師乙告訴筆者，學

校已規定學生獨立專題探究的主題必須與「傳媒」和「教育」有關，所以他只能在任教的通識學生中，挑選有修讀歷史科的學生進行口述歷史研習。那麼，原任的高中歷史科教師會有何反應？教師乙表示：

> *「（歷史科同事）只關心做出來的功課能否用作歷史科校本評核，我其實不介意工作量增多了，我帶學生到古洞進行口述歷史研習，只希望學生明白香港農民的真實情感。」*

他甚至取得校長的支持，邀請農夫到學校教授種植方法，並在學校開闢農圃，讓學生比對口述歷史實習與農圃經驗的學習成果。其實，據筆者觀察，教師乙正以時間換取課程空間，先改變學生對社區農業的看法和態度，落實社會實踐和關懷，再以學生的學習經驗推課程變革，這是他以半職教師換回來的「優點」（即教擔及工作量較少）。

兩位教師的務實方式未必會以白紙黑字的方式記錄在（學校）課程文件，但學生的學習成果卻成為了校本課程發展的關鍵，令校本課程改革不再停留於教學法的改變。

## 戊、結論及反思

過去關於口述歷史的教學研究呈現兩極化的走向，歷史學者雖然肯定口述歷史的社會意義，但他們仍視中學歷史課程為歷史學術研究的從屬，只從歷史思維的角度，將口述歷史組織到中學歷史課程之中，忽視了口述歷史的社會向度課程取向（Stengel, 1997；林慈淑，2007）；另一方面，鄉土學習和社區研習只將口述歷史教學視為帶有社會向度的「課外活動」，卻忽視了學校課程的學術取向與口述歷史教學之間的張力。其實，從是次的研究所見，從理解口述歷史的教學理念到課堂實踐，教師需要兼顧不同的課程取向，有些是外在的，有些則是個人信念的，他們都希望取得更多同事及學生的認同下，持續推動口述歷史教學。無視實際環境的限制可能為有心推動課程改革的教師帶來更大的挫敗感，務實地因應學校處境而引入新的教學嘗試，反能帶來課程的對話，體現校本課程發展的精神。

Marsh 指出，「學校本位課程發展，是一種強調『參與』、『草根式民主』的課程發展口號；是一種重視師生共享決定，共同建構學習經驗的教育哲學；也是一項需要課程領導與組織變革的技巧」（李子建，2002，頁 113）可惜香港的校本課程改革仍是

單向的發展過程，由學校中層及管理層設計、再由分科討論執行，「中央 ── 邊陲」的課程發展模式並沒有改變。是次參與研究的教師從個人信念開始，因應教學進度、學生回饋、同事的反應和社會變化修改口述歷史的課程設計，希望由學生的經驗課程（experienced curriculum）找到突破點，帶動校本課程變革，這樣的校本課程發展才能體現理念課程、計劃課程、執行課程和經驗課程之間的動態關係，亦會釋放更大的空間，讓教師將口述歷史教學的社會取向融入校本課程。

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# *Between teaching method and social practice: How do teachers accommodate oral history to school-based curriculum?*

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## Abstract

Recently oral history has been widely accepted and adopted by secondary school teachers. Its social meaning also makes it easier for teachers to adopt oral history as an interdisciplinary method of project-based learning. However, teachers are confronted with many practical problems while accommodating oral history to school-based curriculum. In the perspectives of two secondary school teachers who intend to promote oral history in their own schools as examples, this article will analyze how teachers' curriculum orientations, educational beliefs, and practical concerns influence the way of teaching oral history.

## Keywords

History education, oral history, curriculum orientation