

Assessment Reforms in Hong Kong

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Abstract

In many nations around the world, reforms are underway to allow more students to participate in senior secondary education and to better prepare them for life in the modern world. In Hong Kong, after some five years of consultation and discussion, a consensus has been reached regarding a series of reforms that will be implemented in the coming years. The academic structure will be changed to allow all students to complete senior secondary education. The curriculum will be changed so that all students will take four core subjects and two or three elective subjects. Assessment will change to incorporate a component of statistically moderated school-based assessment and to introduce standards-referenced methods of reporting achievement. This paper provides an overview of these reforms.

New academic structure

The current structure of secondary education in Hong Kong follows the British 5+2 model, with five years of junior secondary education, which almost all complete, followed by two years of sixth form, taken by around a third of the student cohort.

Following a series of policy decisions dating back to 2000 and extensive public consultations completed in January 2005, agreement has been reached that will see Hong Kong change to a new 3+3+4 academic structure in which all students will be expected to complete three years of junior secondary education, followed by 3 years of senior secondary education. A proportion will then proceed to four-year undergraduate degree programs in universities. Both the old and the new academic structures are shown diagrammatically in Figure 1.

The main impact of the change to the academic structure is that *all* students will be expected to remain at school until the end of their sixth year of secondary education, when there will be a single baccalaureate-style examination, to be known as the Hong Kong Diploma of Secondary Education (HKDSE). This will replace the current two examinations that are currently taken, the Hong Kong Certificate of Education Examination (HKCEE) at the end of the fifth year of secondary education by almost all students and the Hong Kong Advanced Level Examination (HKALE) at the seventh year by about a third of the cohort. This new assessment structure will be implemented on a

timeline that will see the first cohort of students taking the new HKDSE public examinations in 2012.

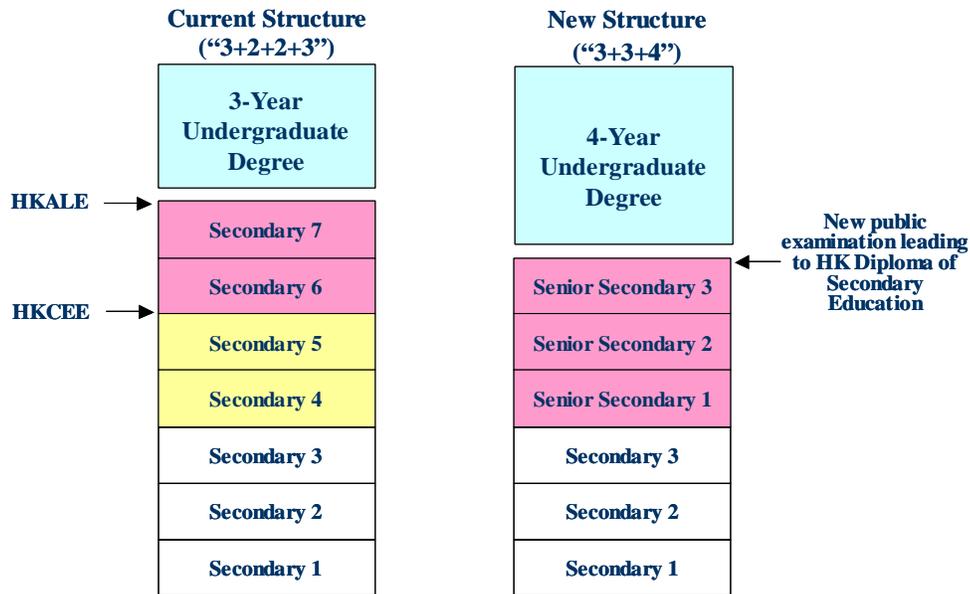


Figure 1. Old and new academic structures in Hong Kong

As part of the overall reform of senior secondary education in Hong Kong, it is intended that the new Hong Kong Diploma of Secondary Education will incorporate a number of changes. The most important include:

- changes to the curriculum and to the subjects that candidates will take;
- the introduction of a component of school-based assessment for each subject; and
- moving to a standards-referenced approach to reporting results.

The remainder of this paper provides a brief overview of these changes.

Curriculum change

In developing the curriculum for the new academic structure, the opportunity has been taken to rationalize the number of subjects on offer and to eliminate current overlaps and redundancies. Under the new HKDSE, all students will take four core subjects, namely:

- Chinese Language
- English Language
- Mathematics
- Liberal Studies

In addition, students will choose two to three elective subjects drawn from two lists. The first list comprises a set of discipline-based school subjects, namely:

Biology	History
Business, Accounting & Financial Studies	Home Economics
Chemistry	Information and Communication Technology
Chinese History	Literature in English
Chinese Literature	Music
Design and Applied Technology	Physical Education
Economics	Physics
Ethics and Religious Studies	Science
Geography	Tourism and Hospitality Studies
Health Management and Social Care	Visual Arts

The second list comprises a set of ‘career-oriented courses’. These will provide a more applied and career-oriented focus than discipline-based school subjects. They will be organized under six areas, namely Applied Science; Business, Management and Law; Creative Studies; Engineering and Production; Media and Communications; and Services. Over 30 of these courses are currently being tried out in a pilot study.

The core plus electives curriculum framework is intended to ensure that all students receive a broad and balanced education that nonetheless provides opportunities for specialization and choice. There is coverage of all key learning areas of the school curriculum and the potential for viable candidatures in all subjects.

School-based assessment

School based assessment (SBA) has been adopted by almost all major examination bodies over the last 20 years to improve the quality of teaching, learning and assessment. It has been progressively introduced in Hong Kong following recommendations made by the Education Commission which urged “*teachers, students, parents and society in general to shake off their traditional concept of assessment and embrace the new assessment culture*”.¹ By 2007, SBA will be implemented in 13 HKALE subjects and 15 HKCEE subjects, covering half of the subjects to be examined under the HKDSE. As part of the new HKDSE, it is intended that school-based assessment will be extended to all subjects.

The main reason for introducing school-based assessment is first to improve the *validity* of assessments. Some important outcomes cannot be assessed within the context of a written examination, particularly where they involve practical work, require special equipment and facilities (e.g., laboratories, studios, theatres and workshops), or involve extended amounts of time (e.g., to complete a research project, create a portfolio of work

¹ Learning for Life Learning through Life, Education Commission, September 2000 p.70.

or compose/design/make something). However, many of these assessments can readily be assessed through school-based assessment.

A second reason for introducing school-based assessment is to improve the *reliability* of assessments. Because they are typically based on multiple observations of the student over an extended period of time, school assessments, once they have been moderated, provide a highly reliable assessment and in some cases are indeed a more reliable indication of the true abilities of the student than their results on a ‘one-shot’ examination.

Other reasons include the prospect of a positive backwash effect on teaching and learning with greater emphasis on student-centred learning and less on drilling for examinations, and a reduction in examination pressures arising from less reliance on a one-shot examination.

Initially, school-based assessment is expected to contribute between 15-30 percent of the total result for a given subject, although this proportion is likely to be higher for some subjects such as Visual Arts.

Statistical moderation will be used to ensure that the marks submitted by different schools are comparable and fit with the abilities of their students as reflected in student performance on the written examinations. It is accepted while schools have a good knowledge of the standards achieved by their own students; they are not necessarily familiar with the performance of students in all other schools. Statistical moderation will ensure comparability of assessments across all schools. The statistical procedures used will ensure that the rank order of candidates as determined through school-based assessment will be preserved, but that the location, spread and shape of the distribution of a school’s assessments will be aligned with those properties of the same candidates’ examination scores.

While school-based assessment is generally welcomed by schools, many teachers and principals nonetheless have a range of concerns about its impact, including fears of abuse and cheating, extra workload for teachers, and lack of readiness to implement school-based assessment. These fears typically accompany the introduction of school-based assessment and need to be addressed seriously.

Standards-referenced reporting

The HKDSE will make use of standards-referenced reporting of assessments. Some form of standards-referenced reporting has been adopted by most major examining bodies in recent years, by nations such as the UK and the USA in their school testing programs, and internationally, as for example in the OECD’s Programme for International Student Assessment (PISA).

Discipline-based school subjects

In the case of discipline-based school subjects, candidates' levels of performance will be reported with reference to a set of standards as defined by cut scores on the variable or scale for a given subject. This can be represented diagrammatically as shown in Figure 2.

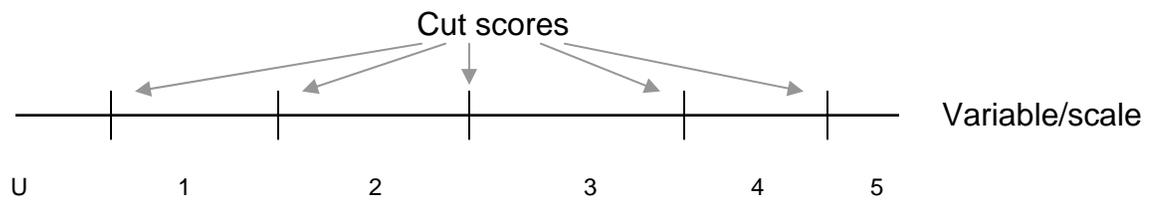


Figure 2. Defining levels of performance via cut scores on the variable or scale for a given subject

For each of the discipline-based school subjects there will be 5 cut scores. These cut scores will be used to distinguish five Levels of performance (1-5) with 5 being the highest. Performances below the threshold cut score for Level 1 will be labeled as 'Unclassified' (U).

For each of the five Levels, a set of written descriptors will be developed that describe what it is that the typical candidate performing at this Level is able to do. Note that the focus is on what typical candidate *can* do, not what they *cannot* do. In other words, it will describe performance in positive rather than negative terms. These descriptors will be 'on-average' statements and may not apply precisely to individuals, whose performance within a subject may be variable and span two or more levels. In addition, there will be annotated samples of student work and performance to illustrate the standard at each level.

Performance in a given subject will be assessed through students' responses to examination questions and through scores on various school-based assessment tasks. An assessment plan will be developed for each subject. This will set out the number of examination papers for that subject and what they will assess. It will also describe the school-based assessment for that subject. The assessment plan will provide the blueprint for assessment within a given subject. It will be based on the assumption that it is possible to conceive of an underlying variable representing performance in that subject and a view about the emphasis to be placed on different components of the overall assessment.

This is shown diagrammatically in Figure 3 for a subject with 3 examination papers and a component of SBA. The weighting to be given to each assessment component will have been determined in advance and specified in the assessment plan. For example, the weightings specified for the imaginary subject depicted in Figure 3 might be: Paper 1 (30%); Paper 2 (20%); Paper 3 (25%); SBA (25%).

The next step is to calibrate the examination questions and the school-based assessment scores so that their difficulties can be placed on the underlying variable or scale. Having calibrated all the questions and assessment scores onto the variable, it is then possible to estimate the abilities of different candidates on this same scale, even though they may not

have all taken the identical set of questions. For example, Paper 2 may contain three essay questions, with candidates being required to answer any two.

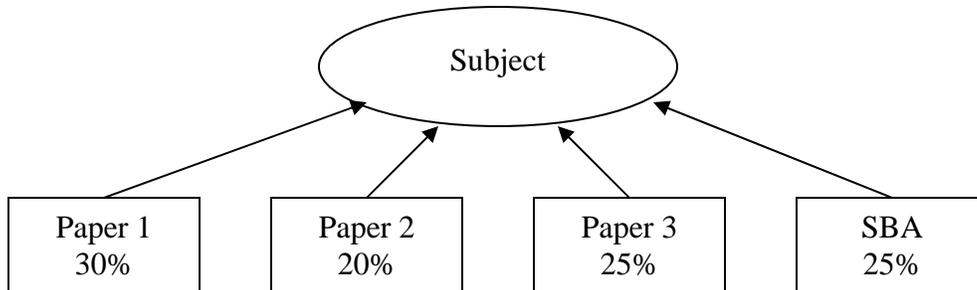


Figure 3. Specifying the variable or scale for a given subject

Calibration is essential in order to permit candidates some choice and yet still have measures of ability that are comparable. Calibration of questions and assessments also enables separate ability measures to be generated for the same candidate on each of the papers of the examination and on the SBA component that are on the same metric as the underlying scale or variable for the subject. Finally, calibration allows the potential to construct graded examination papers to cater for the wide range of abilities that can be anticipated in a subject such as English Language, which is currently assessed by means of two examinations of different standards within the current HKCEE.

A key requirement in any system of standards referenced reporting is to ensure that the standards stay constant over time. This means that a Level 3 achieved in 2012 has the same meaning as a Level 3 in the same subject in 2016.

There are two main approaches used by examining boards and testing agencies to maintain standards over time. The first is to use expert judges to make decisions annually about the locations of the cut scores. This is sometimes called *judgmental linking* and is typically done by a variant of one of the well-known methods of standards-setting (e.g., the Angoff method). The other is to use psychometric methods to link successive examinations. This requires the application of Item Response Theory and the administering a common set of questions to a sample of candidates that link the questions on the current year's examination to those of previous years' examinations.

There is now evidence to suggest that the use of judgmental linking can and often does lead to a drift in standards over time. This is often claimed to have occurred, for example, in the UK, where proportion of candidates gaining a grade A in the GCE A-Level examinations has increased over time without corresponding perceptions among users (especially universities) that more candidates are reaching the same high standard.

In maintaining standards within the context of the HKDSE, it is proposed to use psychometric methods to identify indicative cut scores and to then employ expert judges to make final decisions on the exact locations of the cut scores through detailed inspection of scripts around the indicative cut scores. The method will ensure that cut scores are always within a narrow range as indicated by psychometric linking, but sensitive to actual performances through the fine-tuning conducted by the expert judges. In this way, a drift over time in standards is avoided. In order to psychometrically link successive examinations, use will be made of secure reference examinations that will be administered to small samples of candidates each year.

In developing standards for the new HKDSE, it is important that at the higher levels they be benchmarked against the standards of performance typically exhibited by candidates obtaining various grades in the current ‘A-Level’ examinations (HKALE). This is important for tertiary selection purposes and especially for achieving international recognition. It is also realistic given the fact that while the new academic structure results in one year less time in secondary schools, instructional time is reduced by only around 2 months. For these reason, it is intended to ensure that there is broad comparability between the following grades in the Hong Kong Advanced Level Examination grades and the standards-referenced Levels in the new Hong Kong Diploma of Secondary Education:

HKALE	HKDSE	
A	5**	Top 1%
B	5*	Next 3%
C	5	
D	4	

In this way, continuity of standards will be assured at the ‘top end’ of the five Levels and recognition can be granted in advance by overseas universities.

Levels 1 to 3 will encompass lower levels of performance. Level 1 will be set at a threshold level that most candidates can achieve with persistence and effort, but nonetheless represents real achievement and worthwhile performance.

Career-oriented courses

Career-oriented courses will be assessment through third-party moderation of assessments awarded by providers. These assessments will be made with reference to a set of competencies. A defined level of performance will lead to one of two awards, namely ‘attainment’ and ‘attainment with distinction’. Candidates awarded ‘attainment with distinction’ will be deemed to have performed at a level comparable with that of a candidate awarded a Level 3 or above in discipline-based school subjects.

The explicit link to the more traditional, discipline-based subjects will assist in gaining recognition for career-oriented courses by tertiary institutions and by the public at large. In Hong Kong, there is a history of distrust of curriculum other than the strictly academic

and of assessment other than that carried out through public examinations. For this reason, an explicit link between the new courses and the discipline-oriented subjects is important. At the same time, there also needs to be explicit links with vocational qualifications. Thus, it is intended that the new career-oriented courses will be mapped against the Hong Kong Qualifications Framework, enabling credit to be granted towards relevant vocational qualifications.

Student Learning Profile

In reforming senior secondary assessment in Hong Kong, there is an awareness of the need to recognize abilities and achievements other than those relating to academic performance and qualifications. Within the new curriculum, considerable emphasis is placed on the importance of a range of other learning experiences, including participation in sport, outdoor and aesthetic activities, community service, and so on. Such activities are vital in developing well-rounded individuals.

To enable students to have a comprehensive record of all learning activities, a student learning profile is being piloted that will capture school performance together with participation and achievement in a range of other activities in a format that enables students to build up a validated electronic curriculum vitae that they may choose to make available to employers and tertiary institutions when applying for jobs or seeking to enroll in programmes of study.

Concluding comments

The Hong Kong assessment reforms parallel reforms that have occurred or are taking place in many other countries. The political task of achieving a broad consensus on the way forward has been completed successfully. There remains a great deal of work to be done to complete the new syllabuses and the new assessment processes and systems. Like most examining boards, HKEAA will be investing in new systems to automate many examination processes, including systems for scanning scripts and conducting on-screen marking. The Authority will also be working with the Education and Manpower Bureau to deliver programmes of professional development and training for teachers and school administrators to facilitate the implementation of the assessment reforms. Both the funds and the necessary time to complete this work have been provided: the challenge is to implement the reforms smoothly and on time.