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Post-Reform Trends in the New South Wales Higher School Certificate

Gordon STANLEY
Board of Studies, NSW and
University of Sydney

Background: Reform of senior secondary school certificates is occurring in many countries. Such reform is driven by a desire to have a better understanding of student achievement and clearer pathways into further education and employment.

Aims: This paper examines trends since the reform of the New South Wales Higher School Certificate (HSC) initiated by the State Government White Paper 'Securing Their Future' (Aquilina, 1997).

Sample: The paper reports data from the total population of candidates for the HSC from 2001-2004.

Results: The results show that a previous trend in New South Wales schools towards 'dumbing down' has been reversed and meaningful vocational education and training (VET) subjects have been incorporated successfully as a major pathway in student choice.

Conclusion: Reducing the number of curriculum offerings has not had an adverse effect on participation and reporting results according to a marks model of standards-referencing has made the content of achievement clear and has led to better understanding of the standards required for improvement in performance. These trends are of interest to systems planning reform.

Key Words: senior school certificate reform, standards-referenced reporting, student achievement.

背景：許多國家正在進行高中會考改革，這些改革主要是由更深入理解學生成就、和更加清楚進修及就業的出路這兩個原因所帶動。

目的：本文審查由新南威爾斯省政府白皮書「掌握未來」(Aquilina, 1997) 所引發的省內高中會考(HSC) 改革後的趨向。

對象：本報告資料取自 HSC 2001-2004 的考生。

結果：顯示一個早先在新南威爾斯學校往下滑的趨向被扭轉了，並且成功地引進了職業教育和培訓的科目作為學生主要選擇的路向。

總結：減少開設課程科目的數量對參與沒有不利影響，並且根據標準參考制定的成績報告使內容結果更清楚，從而更明白改善表現所需要的標準，系統計劃改革對這些趨向會有興趣。

關鍵詞：高中會考改革, 標準參考制定的成績報告, 學生成就

Reform to senior secondary certificates has been occurring and is planned in many countries around the world, including in Hong Kong (Li, 2004). The Hong Kong introduction of career-oriented studies and standards-referenced reporting is in line with changes happening in other systems. In the United Kingdom the Secretary of State for Education and Skills has issued a White Paper outlining major reforms to secondary education (Kelly, 2005).

Much of the emphasis in the push for reform comes from a desire to have a better understanding of student achievement and

clearer pathways into further education and employment. As participation has increased there has been a concern that senior secondary certificates should provide a broader bridge to post-school destinations than the traditional pathway to university.

In Australia a number of States have reviewed or are in the process of reviewing their secondary curriculum. There has been considerable interest in the reform of the New South Wales Higher School Certificate (HSC) because it involved reduction in the number of curriculum offerings and moved from a norm-referenced reporting system to a standards-referenced system with a

relatively smooth transition. The 'New' HSC had its first candidates in 2001. Now that four cohorts have completed their HSC it is worth considering what has been learned from the reform experience.

One of the key aspects of the NSW Government White Paper Reform (see Aquilina, 1997) was to make the HSC a more rigorous qualification. All syllabuses were updated to meet national and international best practice. This involved having independent reviews of national and international curriculum in each subject area commissioned from academics whose reports were used in the revision process.

Lower-level courses, which did not challenge students, were removed. This was a bold move at a time when there was increased expectation for greater participation to Year 12. Many thought this would lower participation, as weaker students would want to avoid the challenge of tougher courses.

The traditional approach to increase participation has been to provide more curriculum choice. Curriculum differentiation is introduced on the assumption that providing a wider range of courses and providing less demanding courses will assist in keeping potential early leaver students at school. However anecdotal evidence suggests that this may not always be successful.

Low-level courses often get a 'Mickey Mouse' label and achievements in them are not valued anyway (see for e.g. Mansell, 2005). This can negate any value

they may have had in assisting retention. Moreover curriculum differentiation can become an equity issue for smaller schools who generally have less capacity to provide many offerings.

Thus the outcome of the curriculum changes for retention is a matter of interest. To get a handle on the magnitude of the changes made it is important to know that there was a 25% reduction in the number of Board developed HSC courses offered in the New HSC and that the number of Board endorsed courses has declined from 317 in 2000 to 39 in 2003-4. This leads to the question: Was there any discernible negative effect on participation as a result?

Table 1 provides participation data in the form of apparent retention rates calculated on the same basis from 2000 (Old HSC) to the fourth year of the New HSC. The trend over the four years since the implementation of the changes is for increased rather than reduced retention despite tougher courses and fewer curriculum offerings.

Some critics still feel that participation to Year 12 is not high enough in NSW, but there is no valid reason for supposing that it would have been higher if we had retained more course offerings. A 'safety net' provision of Board endorsed courses allows for schools to provide courses tailored to local needs if judged necessary by the school community. It is notable that they have dramatically fallen in number since 2001.

Table 1: Year 10, 11 and 12 Enrolments and Apparent Retention Rates, NSW

Year	Students			Apparent Retention Rate		
	Year 10	Year 11	Year 12	Year 10-11	Year 11-12	Year 10-12
2000	81 588	65 497	56 844	80.8%	85.0%	69.8%
2001	81 397	67 556	56 988	82.8%	87.0%	70.3%
2002	81 930	68 205	59 085	83.8%	87.5%	72.4%

2003	81 737	69 355	59 139	84.7%	86.7%	72.7%
2004	82 523	68 259	59 943	83.5%	86.4%	73.2%

Source: *Schools Australia*, Australian Bureau of Statistics

Perhaps one of the more interesting aspects of the reform was in relation to English, the only mandatory subject. From 1989 to 2000 students could meet this requirement by selecting one of three courses: Contemporary, General or Related English. Contemporary English had been introduced to cater for the needs of less academic students, but during the 1990s there was a strong downward drift in student numbers away from the more demanding courses and into the less demanding courses. Enrolments in Contemporary English increased from 8127 in 1991 to 18224 in 1996 and during the same period the numbers in English 3 Unit dropped from 3603 to 1732 and in Related English from 11428 to 6031 and in General English from 32319 to 29741.

To address this ‘dumbing down’ trend Standard and Advanced English in the New HSC were developed with some overlapping content to allow for reporting on a common scale. Standard English was designed as a more rigorous course than Contemporary English and to be comparable in demand to General English. Advanced was to replace the Related course and be at a comparable standard. By placing these two courses on a common reporting scale the incentive to dumb down would be removed. As well two optional extension courses were introduced.

The effects on enrolments can be seen in Table 2, where we can see that since the New HSC students appear to be reaching upwards with increased enrolments in the advanced and extension courses in each

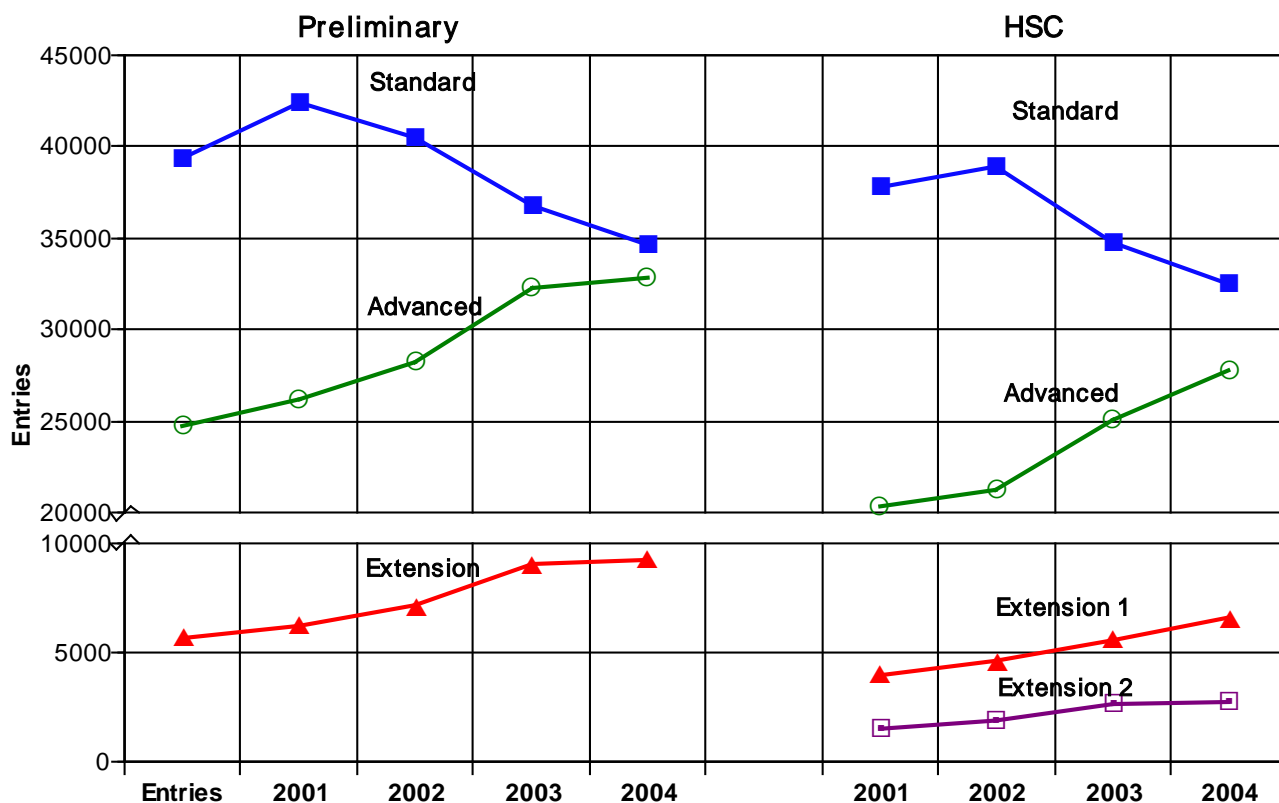
year. Looking at the 2003-4 Preliminary data it would appear that the rapid growth in Advanced and Extension courses might be reaching a plateau.

Reaction to the new English syllabus appears to have settled down despite earlier criticism ranging from being ‘too demanding’ to being ‘captured by post-modernism’. In developing the new courses there was an attempt to balance the reading of literature with the need for critical theory and a broad understanding of contemporary communication and text types. Now that teachers and students have gained experience with the new courses there appears to be greater acceptance of the value of the reform.

While critics may consider the minimum standard (Band 2) in English is too low, the new standards-referenced reporting system encourages all students to work towards achieving *higher* levels and provides information about the next step for which the student should aim. The new courses have raised expectations and higher achievement in English has occurred at both ends of the ability range. More students are reaching the minimum standard each year and there is evidence that the Fundamentals of English course is producing dividends in higher outcomes for weaker students (see Stanley & MacGann, 2005). The high level of engagement and creative achievement now possible in the Extension 2 English course has been presented to acclaim in the *Young Writers Showcase* publication produced each year since 2001.

Table 2

Entries in English Courses 2000/1 - 2004



Mathematics alongside English is a discipline of interest in the HSC because of its perceived importance in so many fields of further study and employment. At the time of the reform it was decided to leave the syllabus for the 2, 3 and 4 Unit Mathematics courses unchanged. They are now known as Mathematics, Mathematics Extension 1 and Mathematics Extension 2 respectively. Instead there was a review of the non-calculus courses, which led to the removal of the lower-level Mathematics in Practice course and the development of General Mathematics as a demanding replacement course for Mathematics in Society.

Following these changes there has been an overall reduction of the order of 4000 in the number of students enrolled in a mathematics course as part of their HSC program of study. There has been some debate as to the merits of fewer enrolments

overall in mathematics courses. However there is questionable value in encouraging a remedial mathematics course at HSC level. Those schools still offering the lower demand Board Endorsed Course in Mathematics reported a drop in enrolments from 1504 in 2001 to 341 in 2004. This would suggest there is now less demand for a remedial mathematics course in the HSC.

The pattern of enrolments in mathematics courses from 2000 to 2004 are shown in Table 3 where it can be seen that there was a decline in 2 Unit Mathematics from 2001 to 2002 with the numbers stabilising since then. General Mathematics showed an increase from 2001 to 2002, but this has reverted to 2001 levels since then. Perhaps the most interesting trend is for the numbers in the extension courses to be increasing for each year of the New HSC. However the trend line for the Preliminary Extension course suggests that the numbers

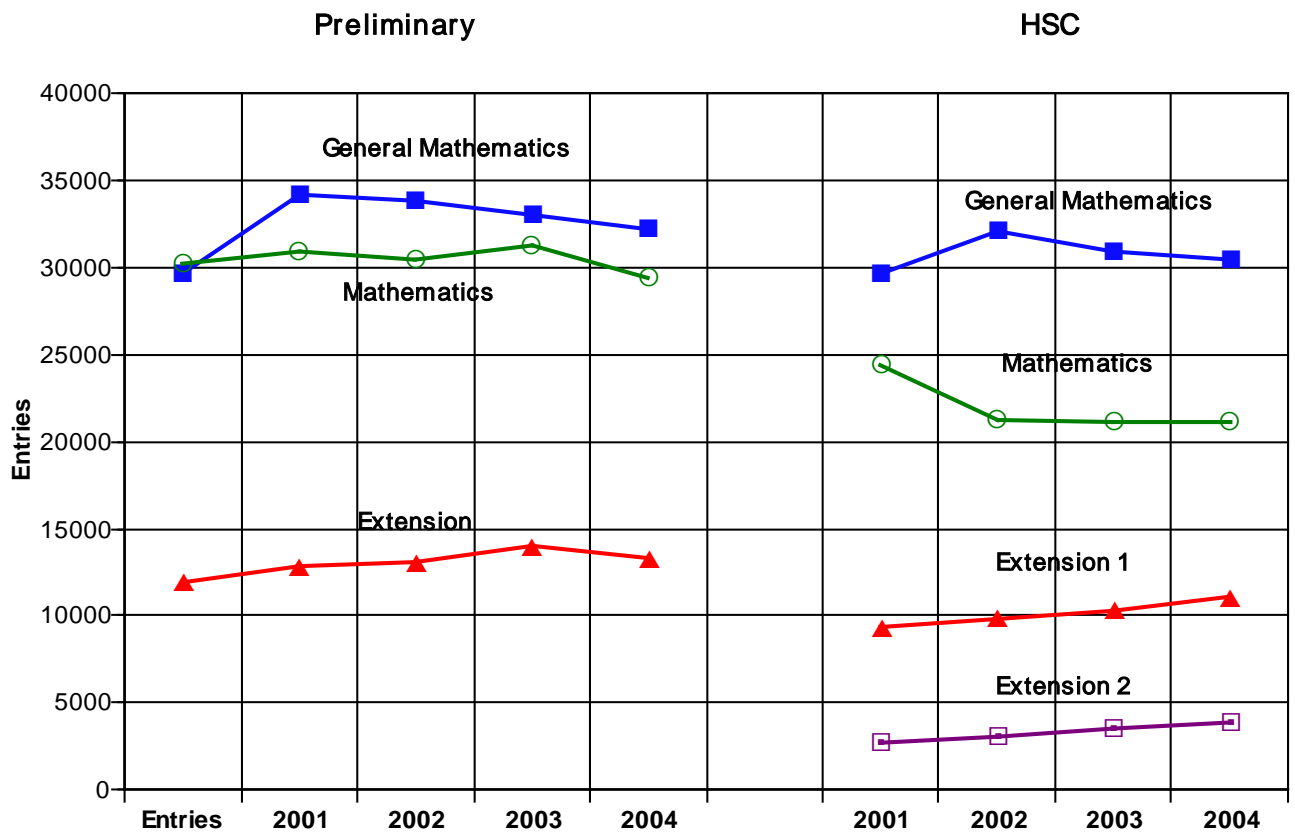
in HSC Mathematics Extension courses may be reaching a plateau.

It can be argued that the results for Mathematics are not as impressive as those for English. Removing the less demanding course has led to fewer enrolments in the

subject area of mathematics. Nevertheless at the top end more students are taking the most demanding course. Now that the 7-10 Mathematics courses have been revised the Board of Studies has indicated that it will review the HSC courses.

Table 3

Entries in Mathematics Courses 2000/1 - 2004

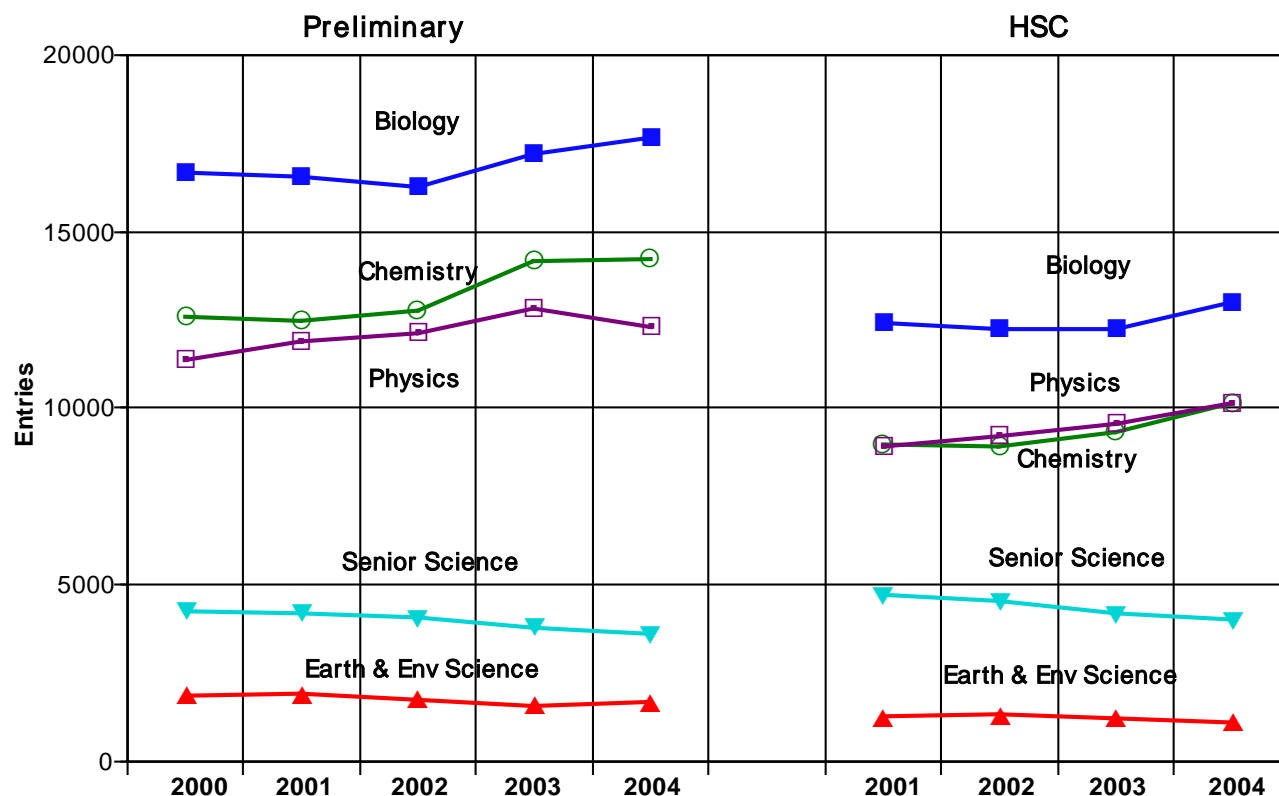


The removal of the General Science and the Science for Life course meant that students were confronted with more demanding science courses in the New HSC. Table 4 presents the trends in enrolments in science courses since the

introduction of the new courses. Enrolments in Physics, Chemistry and Biology have trended upwards over the four years. Earth and Environmental Science has remained fairly steady over the four years and Senior Science has trended downwards.

Table 4

Entries in Science Courses 2000/1 - 2004

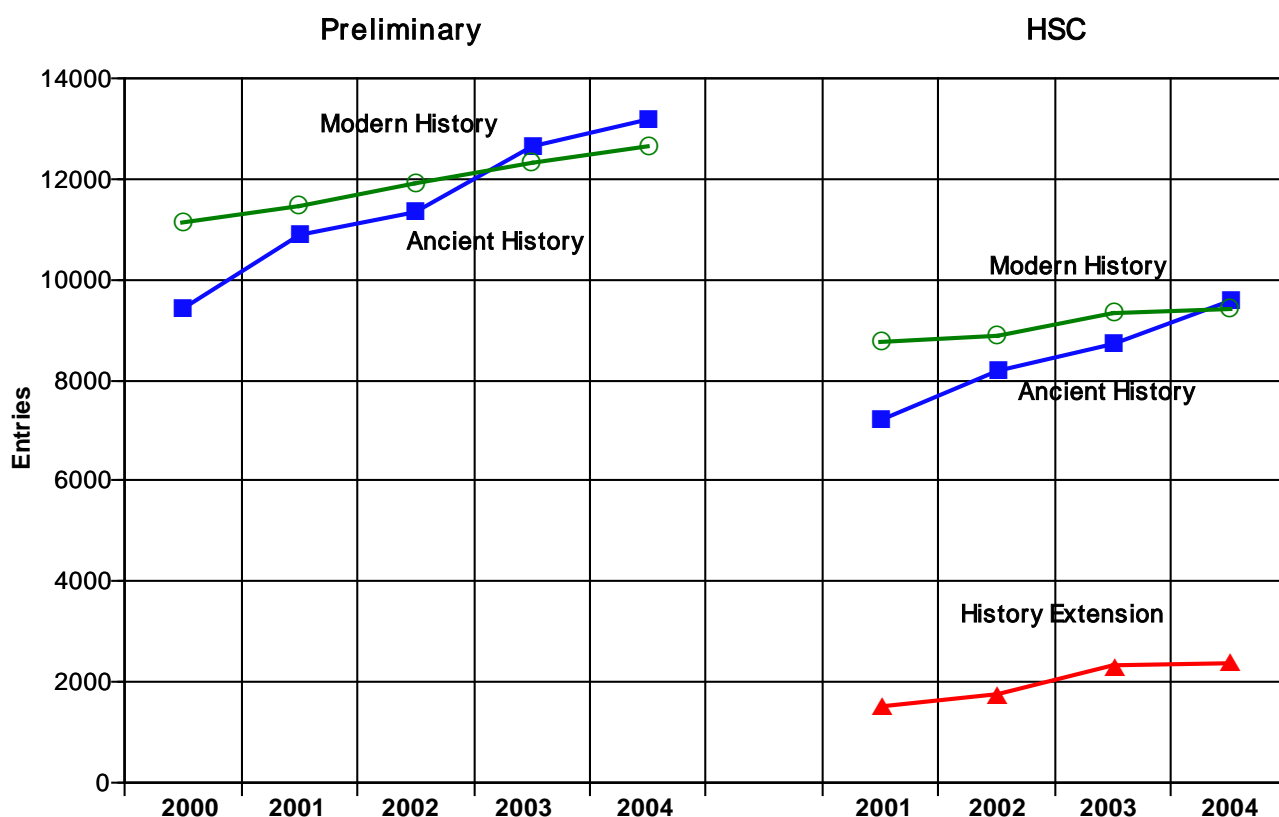


The pattern in science enrolments must be considered in the context of the fact that the changes to the science curriculum were the first major changes for some years. There was debate about the manageability of content in the new syllabuses introduced in 2000. As a result the Board of Studies made some revisions to these syllabuses. Despite this, there is evidence that the trend shows growth in enrolments in the basic sciences.

In the area of History, both Modern and Ancient History gained from the elimination of their respective courses for less academic students. Enrolment trends in History are presented in Table 5 where it can be seen that enrolments have trended upwards in both Modern and Ancient History as well as in the History Extension course. Ancient History enrolments exceeded Modern History in 2004.

Table 5

Entries in History Courses 2000/1 - 2004



One of the challenges for education systems is to incorporate vocational education into the curriculum without it being seen as less desirable than traditional subjects.

From 1984 to 1995 a number of initiatives were taken to incorporate vocational education and training (VET) into the HSC curriculum. While these courses were generally considered a positive addition to the curriculum they were often taken as ‘taster’ courses without any clear pathway for future development.

In the New HSC the Board developed eight industry curriculum frameworks as an alternative to the various VET approaches that had characterised the first phase of VET incorporation into the HSC. The frameworks are based on national training packages and define how units of competency drawn from these packages are

arranged for the purpose of gaining unit credit for the HSC. Wherever possible, VET courses in industry curriculum frameworks are aligned to national VET qualifications.

The courses within the framework provide students with the opportunity to develop the workplace competencies, which the industry has determined are required by an entry-level employee. Typically this means that certificate level II and some certificate level III competencies can be obtained in a framework course.

In 2002 the percentage of VET HSC units as a percentage of the total number of units was 13 per cent up from 3 per cent in 1995. While the Board continued the option of schools being able to propose VET courses for endorsement outside of the frameworks, only 10 per cent of VET units were taken in this manner. Thus the reform appears to have met the requirement for

better articulated and more career focussed offering in VET.

One of the issues relating to acceptance of VET courses relates to how well students perform in them relative to other courses. Due to the choice of options, relatively few students take a common set of subjects. Some indication of comparative

performance relative to other subjects is shown in Table 6, which shows the band level typically obtained in other subjects by students who achieved band 5 in their VET courses. Band 5 was chosen as the comparison point as relatively few students obtained a mark in the band 6 range in VET courses.

Table 6

Average Band Awarded to VET Students Achieving Band 5	
Subject	Average Band
English	4.1
All courses	4.4
Community and Family Studies	5.0
Design and Technology	4.4
Mathematics	4.0
Geography	4.7

From this table it can be seen that students who choose a VET subject do better in their VET subjects than in their more academic courses, a possibly desirable outcome from the point of view of a pathway to employment in a specific industry. The NSW framework courses are similar to the career-oriented studies program now being trialled in Hong Kong.

An important policy objective to ensure parity of esteem with other courses was that VET courses should count towards university entrance. An initial obstacle to achieving this objective was that VET assessment does not typically allow for graded competencies. If outcomes were to be appropriately weighted to allow for ranking of performance it was necessary to develop an examination, which provided recognition of different levels of performance. Thus to enable students in VET courses to have opportunity for their

course outcomes to count towards the University Admission Index (UAI) external examinations based on underpinning knowledge were developed in a similar format to those for other subjects in the HSC. These examinations were optional for those students not wishing to be ranked for university entrance.

This appears to be a popular option. In 2002 86.2 per cent of the 17,246 students enrolled in VET courses completed one of the optional examinations with 84.2 per cent of them receiving a UAI. As the percentage of the total HSC cohort receiving a UAI in 2002 was 81.8 per cent, the UAI figures for students taking VET subjects were very close to the cohort as a whole.

As with other aspects of the reform, making the VET offerings more rigorous and aligning them with national VET qualifications has led to an increase in

student enrolments. Participation of about one in four students in such courses appears to have become a stable feature of the New HSC.

The shift from a norm-referenced to a standards-referenced system of reporting results brought the HSC into line with the modern trend to report achievement in terms of a statement of outcomes or competencies demonstrated. While such reporting has been well established in the vocational sector in Australia, the school education sector with the exception of Queensland has tended to report in terms of marks or grades with implicit rather than explicit understanding of standards.

Following the advice of McGaw (1997), a marks model of standards-referencing was adopted. Marks are aligned to standards (the band descriptors) and reported marks refer not to a fixed percentage of student achievement, but to a common standard of achievement. The alignment of marks to the same standards is made each year based on the professional judgement of teams of judges for each subject. For example at the highest standard of performance a mark of 90 or greater is only reported if students demonstrate the characteristics of the band descriptors for band 6. Thus marks have the same meaning in terms of the content of achievement from year to year, even if the number of students demonstrating that level varies.

Adopting a marks model of standards referencing enabled a relatively smooth change from past practice. For university entrance purposes it was essential that the scaled ranking system producing the Universities Admission Index (UAI) could be retained as it has been. However reporting marks in bands enables marks to have content meaning in line with current expectations for better understanding of educational outcomes. Performance can be understood in terms of the band descriptors.

The standards packages sent to all schools have provided important feedback in the form of examples of three student examination responses at each band level for each subject. Teachers report that the standards packages have helped realistic goal setting for students as everyone has a better understanding of the continuum of performance. From the point of view of the end-user of the results, requirements for skill as expressed in position descriptions or course prerequisites can be compared with the band descriptors of performance attained.

Many systems such as the UK A-levels and the International Baccalaureate do not report outcomes in terms of marks, but only in terms of the grades, which are standards-referenced. By so doing they fail to allow for differentiation within bands of performance and this can lead to grade inflation or failure to discriminate differences among higher level candidates which may disadvantage them in some selection situations.

Looking at the marks distribution after standards-referenced judgements have been made allows us to see if there is an improvement or decline with respect to the standards from year to year. There have been major debates about the changes in the numbers getting high A-levels in the UK, with the changes being seen as due to grade inflation rather than due to improvements in teaching/learning. Large shifts unrelated to any changes in the general ability profile of students may rightly be open to suspicion. A more reasonable outcome is to expect some small movements upwards as students and teachers develop a clearer understanding of the standards required.

Table 7 shows the aggregate trend in the highest band of achievement (Band 6/E4) students for the HSC over the period 2001 – 2004. Analysis is confined to courses with total entries of more than 600 students over that period (i.e. average annual entries greater than 150 students).

Table 7: Number and Percentage of Band 6/E4 Students by Year – All Large Courses

Year	Total Course Entries	Total Band 6/E4	% Band 6/E4
2001	308688	18566	6.0%
2002	319559	24122	7.5%
2003	320950	25155	7.8%
2004	324750	27547	8.5%

It would appear that increases in students achieving marks in the highest bands has shown modest incremental gains from 2001 to 2004 with the greatest gain of 1.5 % between 2001-2002 and less than 1 % since then. As part of recognising achievements in the HSC each year the number of students who obtain a mark in Band 6/E4 in 10 units are designated all-rounders and receive a Premier’s Award. In 2001 0.58% of the total candidature received this award.

Table 8 shows the incremental change in achievement for all rounders compared to the increment in total Band6/E4 students since 2001. This data suggest that students showed the largest gain from the first to the second year of the new system, most likely due to the first impact of feedback from the standards packages. Gains seem to be small since then.

Table 8

Incremental % Change		
Year	Band 6	All-Rounders
2001/2	1.5	.56
2002/3	0.3	.17
2003/4	0.7	.17

Presenting the data at the aggregate level hides the fact that in individual subject areas there have been some sizable shifts in the numbers achieving the Band 6/E4 outcome. At the level of a particular course a shift in outcome can be due to a range of factors including size and ability level of candidature in any given year. (Masters, 2002).

Now that the New HSC is not so new, what have we learned? A four-year time series is not long to evaluate a major change. At this point in time the overall

trend of results is encouraging and consistent with the reform goal to make the standards expected and the evidence of outcome clear. The previous trend towards ‘dumbing down’ has been reversed and meaningful VET opportunities are clearly incorporated as a major pathway in student choice. The reforms initiated by the NSW Government White Paper ‘Securing Their Future’ (Aquilina,1997) have resulted in students re-engaging with rigorous courses of study and better outcomes are being achieved and reported in a transparent way.

Importantly, reducing curriculum differentiation has not had an adverse effect on participation.

Each education system has its own cultural history which influences outcomes. However the trends emerging from the NSW experience suggests that the similar proposals for secondary reform in Hong Kong incorporating career-oriented studies and a move to standards-based reporting is likely to be a successful innovation.

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Author

Professor Gordon STANLEY
President, Board of Studies NSW
Adjunct Professor of Education
University of Sydney
Email: Stanley@boardofstudies.nsw.edu.au

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