

**Student Education Profiles 2007:
Preparation, distribution, appeals**

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Overview

This is a report of activities completed by the Queensland Studies Authority (QSA) as part of issuing 40 886 Student Education Profiles (SEPs) to students who completed Year 12 in Queensland in 2007.

The SEP may contain a Senior Certificate or it may contain a Senior Certificate and a Tertiary Entrance (TE) Statement. The QSA issues the Senior Certificate, and is responsible for calculating the rankings derived from school assessments: Overall Positions and Field Positions (OPs and FPs). The QSA also issues the TE Statement, and informs students about these rankings.

All students who complete Year 12 with at least one result in an Authority subject, Authority-registered subject, or Recorded subject, receive a Senior Certificate. The Senior Certificate also reports the details of accredited vocational education and training (VET), as well as grades in the Queensland Core Skills (QCS) Test.

OP-eligible students receive a TE Statement. It reports overall achievement on a ranking from OP1 (highest) to OP25 (lowest), as well as achievements in a maximum of five fields ranked from FP1 (highest) to FP10 (lowest).

2007 was the final year Senior Certificates were issued. From 2008, eligible students will receive a Queensland Certificate of Education (QCE). The QCE is Queensland's new senior school qualification, usually awarded to eligible students at the end of Year 12. The QCE recognises broad learning options and offers flexibility in what, where and when learning occurs.

In 2007, the Certificate of Post-Compulsory School Education (CPCSE) was in its fourth year of general implementation. Students are eligible to receive the CPCSE if they have at least 12 years of schooling and are identified by the school as having an impairment or difficulties in learning that are not primarily due to socioeconomic, cultural and/or linguistic factors. All CPCSE students who completed a VET certificate had this reported on their Senior Certificate; units of competency/modules of partially completed VET certificates were reported on their CPCSEs. Including the CPCSE in the suite of certificates the QSA issues ensures that the educational achievement of all students can be recorded.

In 2008, the title of the Certificate of Post-Compulsory School Education will change to Queensland Certificate of Individual Achievement (QCIA). This change emphasises the individual achievement rather than focusing on the post-compulsory phase of learning. The first QCIA and QCEs will be available to young people at the same time.

Table 1 presents summary information about Year 12 students in 2007.

Table 1: Summary of the Year 12 student population in 2007

Number of Year 12 students (including visa students)	41 906
Number of Year 12 students (excluding visa students)	41 193
Students eligible for an OP or equivalent OP	26 762
Students eligible for an OP (excluding visa students)	26 049
Students ineligible for an OP or equivalent OP (including visa students)	14 837
Students ineligible for an OP (excluding visa students)	14 702
Repeat students (including visa students)	67
Re-entry students	22
Students who completed senior studies over three years	495
Visa students (eligible and ineligible for an equivalent OP)	713

In preparing and distributing SEPs, and during the review period, the QSA:

- made available to schools — via the QSA's schools website — provisional data about their students
- analysed data to produce parameters needed in calculating OPs and FPs
- analysed data from each school looking for possible anomalies
- analysed individual student data to identify possible outliers before finalising OP calculations
- conducted any necessary special-case calculations
- determined OPs and FPs
- produced and dispatched Senior Certificates and TE Statements
- provided OPs and FPs through the QSA's Smart OP website and an SMS service
- electronically transmitted tertiary entrance data to all tertiary admissions centres and selected interstate universities
- processed applications for verification (Senior Certificate) and review (TE Statement).

1. What developments were there in the format of the Senior Certificate?

The vision of the QSA is to be a leading education service for all students in Queensland. The QSA is dedicated to, among other things, issuing certificates that are valued and widely accepted as informative, accurate, and authentic records of students' achievements.

Since 2000, students have received Senior Certificates printed on A4 paper with details about vocational education achievements and other Recorded subjects printed on accompanying statements.

In 2007, certificates printed with accompanying statements reported vocational education in one or more of the following ways:

- as VET embedded within Authority subjects or Authority-registered subjects based on QSA syllabuses and study area specifications (SASs)
- as stand-alone VET certificates
- as VET completed as part of school-based apprenticeships or traineeships (SATs).

Some students' VET achievements were reported on two statements that accompanied their Senior Certificates due to the large number of units of competency/modules completed.

In 2007, as in the previous seven years, students who completed studies towards a SAT had the opportunity to have these studies reported on their Senior Certificates.

The back of all 2007 Senior Certificates gave summary information about:

- levels of achievement in Authority and Authority-registered subjects
- QCS Test grades
- completed VET certificates
- number and type of subjects which included VET.

The Senior Certificate also included a statement that it is a credential recognised within the Australian Qualifications Training Framework (AQTF).

In 2007:

- 41 599 senior students received a Senior Certificate (in 2006 there were 40 608)
- 365 external certificates were issued (in 2006 there were 463)
- 538 CPCSEs were issued (in 2006 there were 591); of the 538 students receiving CPCSEs, 231 received both a Senior Certificate and a CPCSE, and 307 received the CPCSE only
- 16 714 students achieved VET units of competency/modules embedded in one or more Authority or Authority-registered subjects (in 2006 there were 17 279 students who achieved such embedded VET, and in 1997 there were 2616 students who achieved units of competency/modules embedded in Board (Authority) subjects) — *see N.B. embedded VET*
- 23 204 students from 383 schools successfully completed at least one VET unit of competency/module (23 266 students in 2006)
- 16 046 students successfully completed at least one VET qualification (i.e. complete certificate)
 - 9153 completed at least one Certificate I
 - 8527 completed at least one Certificate II
 - 2286 completed at least one Certificate III
 - 48 students completed at least one Certificate IV or above
- 3533 students either completed or were continuing a SAT.

N.B. embedded VET: Study Area Specifications (SASs) which previously contained Authority-registered subjects with embedded VET have been redeveloped and now only contain Authority-registered subjects and recommendations for stand-alone VET certificates. The staggered implementation of these SASs means a decline in the number of students completing Authority-registered subjects with embedded VET in 2006 and 2007. 2008 will be the final year any students will complete an Authority-registered subject with embedded VET. Embedded VET remains in four Authority subjects.

2. What data did schools receive?

The QSA published data for schools on the QSA’s secure schools website, depending on the category of the school and the category of subject-groups within the school (see Tables 2 and 3). The data consisted of information about scaling parameters for large and intermediate subject-groups, scaling information for small groups, provisional second stage scaling parameters, and provisional QCS Test performance data.

The procedures for calculating OPs and FPs take into account different school sizes as well as differences in the size of school subject-groups. There are also procedures for “visa schools” and “visa subject-groups”. The QSA mailed these schools information about special scaling procedures for visa schools, and procedures used for visa subject-groups.

Table 2 lists the different categories of schools involved in the 2007 OP calculations. Table 3 lists the different categories of school subject-groups involved in the 2007 OP calculations.

Table 2: Count of senior schools by category¹

<i>Total number of schools with senior students</i>	393
Number of senior schools with OP-eligible students:	377
• Large schools	310
• Small schools	70
• Intermediate schools	13
Schools with a high proportion of visa students (visa schools)	4
Schools without any OP-eligible students	16

Table 3: Count of school subject-groups in Authority subjects by category

<i>Total number of school subject-groups</i>	9148
Large subject-groups (≥ 14)	3827
Small subject-groups (1–9)	4069
Intermediate subject-groups (10–13)	1252
Subject-groups with a high proportion of visa students (visa subject-groups)	80
Subject-groups without any OP-eligible students	445

¹ The number of OP-eligible students attending a school can be used as a basis for determining categories: large schools have 20 or more OP-eligible students; small schools have 15 or fewer OP-eligible students; and intermediate schools have 16–19 OP-eligible students.

After receiving assessment data from schools (Exchange Disk #5) on 21 November, the QSA made data available to schools on the QSA's secure schools website as follows:

- QCS summary, large group scaling, QCS versus Within-School Measure (WSM) plots for non-visa schools (uploaded on 26 November 2007).
- Small-group boundaries, intermediate-group and second-stage scaling for non-visa schools (uploaded 3 December 2007).
- Large and intermediate groups and second-stage scaling correction factors for visa schools and schools with visa subject-groups (uploaded on 12 December 2007). (These schools were earlier sent a letter alerting them to different procedures for calculating scaling parameters for subject achievement indicators (SAIs) and overall achievement indicators (OAIs)².)

On the day they were uploaded, the QSA emailed schools about the availability of the data. Schools who could not be contacted by email were faxed the following day. More data were uploaded to the website in February 2008. These provide details about aspects of QCS Test performance, OPs, and selected subject results of groups of students at each school. For comparison, the QSA also uploaded state data to the schools website. Graphs and explanatory notes for 2007 Year 12 data were also uploaded to the QSA secure schools website in February 2008. These graphs provide information about performance of schools' Year 12 students in 2007, and over a length of time. The explanatory notes illustrated possible uses of the data, including trends in student performance.

² OAIs are the weighted averages of scaled SAIs that are then banded into OPs.

3. How were analyses of data used to produce parameters needed in the calculations?

The QSA analysed data to:

- reduce the effect in the calculation of OPs of the QCS Test performance of students who were very much less or very much more successful in the QCS Test than they were at school
- produce the table of small subject-group achievement band boundaries used to convert small-group SAIs into scaled SAIs
- determine the cutoffs for OP and FP bands.

Students are OP-eligible if they complete at least 20 semester units of Authority subjects (including at least three Authority subjects for all four semesters) and sit the QCS Test. If students provide acceptable documentary evidence, they may be exempted from sitting the QCS Test. Although many OP-ineligible students also sit the QCS Test, these students' results are not used at all in the OP calculations. Table 4 provides a summary of the number of students who sat or did not sit the QCS Test in 2007.

Table 4: Students who sat or did not sit the QCS Test in 2007

<i>Total number of students who sat the QCS Test</i>	28 913
OP-eligible students (excluding visa students)	25 737
OP-ineligible students (excluding visa students)	2 531
Visa students	591
Students who sat the QCS Test but did not complete Year 12	55
<i>Total number of students who did not sit the QCS Test</i>	13 048
OP-eligible students who were granted exemption from sitting:	449 (+16 visa students)
• for medical reasons	421
• for bereavement reasons	22
• for cultural reasons	0
• for sporting reasons	4
• for family reasons	3
• for other reasons	15
Students previously OP-eligible who were not granted an exemption from sitting	654 (+29 visa students)

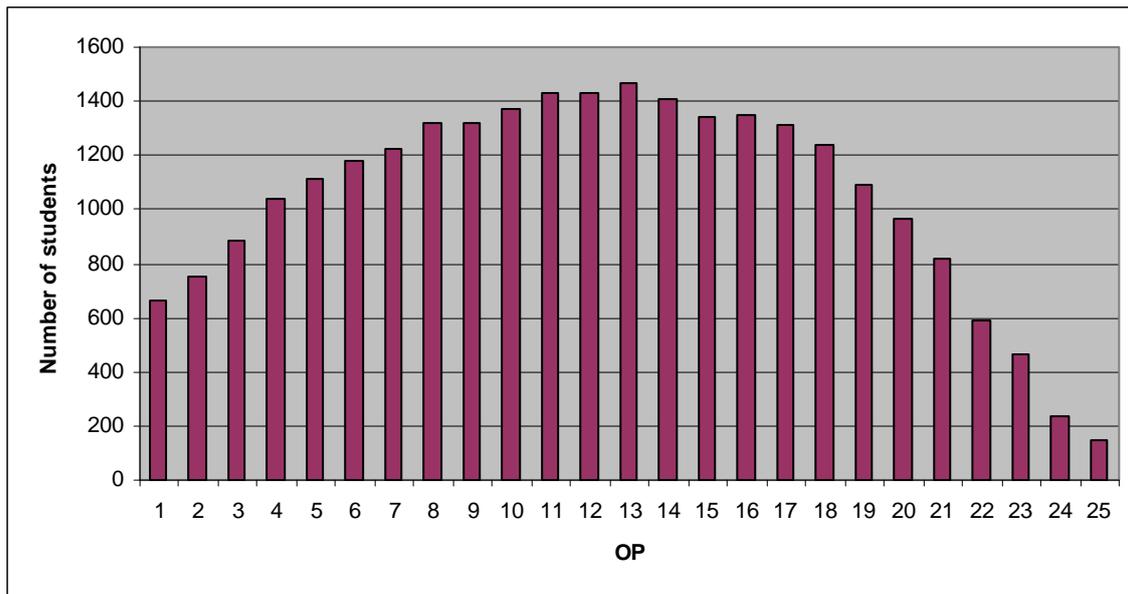
The analysis of data shows that there is a high correlation between the way OP-eligible students perform on the QCS Test and the way they perform in their school assessment. Performance in school assessment is known as Within School Measure (WSM) In 2007, the QCS/WSM correlation was 0.70. The high correlation of QCS/WSM suggests that the QCS Test is a suitable and accurate scaling instrument.

Approximate year-to-year comparability of OPs was maintained in 2007. This process involved finding cutoffs comparable with the 2006 cutoffs, using a combination of estimates from three methods:

- comparing OAI scales using levels of achievement and multiple regression³
- comparing the OAIs of students from 2006 who were matched based on subjects and levels of achievement
- comparing OAI scales using QCS Test results.

Figure 1 shows the distribution of OPs in 2007.

Figure 1: 2007 OP distribution



³ Multiple regression is a statistical analysis used to model students' OAIs based on levels of achievement. The results of a multiple regression can be used to examine the relationship between levels of achievement and OAIs.

4. How were school datasets analysed for anomalies?

We analysed each dataset before we finalised the OP calculations. We analysed the dataset in three ways to detect possible instances in which one piece of information from a school was grossly inconsistent with other information from the same school.

Statistical analyses of datasets identified cases for which values were outside tolerances for:

- gaps within school subject-group Subject Achievement Indicator (SAI) distributions
- possible unusual patterns of SAI distributions across subject-groups
- relationships between school-group results on the QCS Test and overall achievement indicated by students' levels of achievement.

4.1 SAI distributions

We examined all SAI distributions from large school subject-groups as part of the process of checking data supplied by schools. Using several mathematical modelling techniques, the analysis of SAIs looked for, among other things, unusually large gaps, and unusual consistencies in patterns of SAI decisions across different subjects within a school.

We checked SAI distributions against the corresponding Forms R6 (used by schools to propose levels of achievement) for face-value discrepancies among 3827 school subject-groups. In some cases, this involved all subject groups in a school, as there was an unusual consistency across sets of SAIs and/or an unusual clustering of students identified across most or all subjects. The most common pattern identified is linear translations of SAIs from the Forms R6. We contacted schools when we had questions about the face-value consistency of SAI placements and the relativities implied by the corresponding Form R6. As a result of these checks we phoned schools regarding 1341 school subject-groups. These calls lead to changes to the SAI distributions of 914 school subject-groups from 185 schools.

In the past, these analyses sometimes resulted in the QSA requesting exit folios of work for selected students to provide the evidence on which SAI decisions had been made. In 2007, no requests of this type were required.

4.2 School-group data

We checked data for subject-groups and for whole school-groups to determine whether mean QCS Test performances were very inconsistent with overall school performances. For each school a polyscore⁴ was estimated for each student. School-groups with large negative mean residual polyscores were selected. (A large negative mean residual suggests that students in this group tend to have an OAI much lower than their polyscore or estimated overall achievement.) Similarly, we selected school-groups with a much larger polyscore spread than OAI spread for further analysis. (In these cases, the students well above the school mean may on average have OAIs much lower than their estimated overall achievement.)

Groups with a sufficient inconsistency of QCS Test and level-of-achievement information were referred to the QSA's Scaling Anomalies Committee for consideration of possible special-case calculations. As a result of the Scaling Anomalies Committee decisions, we changed final-stage parameters for 11 schools. These changes involved raising the mean OAIs at eight schools and raising the mean-difference at three schools to bring these parameters to the values, which meant they did not stand out as outliers.

Two schools requested that the Authority look at their data due to circumstances the students experienced that could have had a negative impact on their performance on the QCS Test. In one of these cases, examination of the data revealed no evidence to provide grounds for an intervention. In the other case, examination of data supported intervention, and the mean-difference at this school was raised.

⁴ Note concerning polyscores

A simple mathematical model (Simpson, JB & Haladyna, TM 1988, *An Evaluation of Polyweighting in Domain-Referenced Testing*, paper presented at the Annual Meeting of the American Education Research Association, New Orleans, April 1988) can be used to obtain an estimate of each student's overall achievement starting from levels of achievement alone. These estimates are over-simplifications in that they involve ignoring differences between students with the same level of achievement in a given subject; that is, all VHAs in French are treated equally, and so on. As the table below shows, the resulting estimates, "polyscores", of overall achievement correlate very well with OAIs (the finer-grained scale, which is cut into OPs).

Correlation	2007 student data N = 26 229
OAI ~ Polyscore	0.949
OAI ~ QCS	0.731
Polyscore ~ QCS	0.694

This procedure provides estimates of overall achievement independently of the procedures used for determining OPs. The estimates are based on treating each level of achievement in each subject as equivalent. They are not based on treating levels of achievement in different subjects as equivalent, nor are they based on assuming that levels of achievement represent an equal interval scale (that SA is to HA, as HA is to VHA, for example). Therefore, polyscores provide more suitable estimates of overall achievement than simple averages of levels of achievement that have been turned into a five-point scale.

5. What was done to analyse individual student data for anomalies?

For groups of students with similar combinations of subjects, individual checks were based on the relationship between OAI and average levels of achievement (across best five subjects), and OAI and individual polyscore. We also used a multiple regression analysis, which models OAIs in terms of levels of achievement, as an overall check. Unlike analyses based on average levels of achievement, both the polyscore and this analysis have the advantage that they do not involve treating a particular level of achievement in one subject as being the same as the level of achievement in another subject.

Like the polyscore analysis, the multiple regression analysis showed a very good correlation between OAIs and levels of achievement. The strength of these relationships means we can look for outliers — cases in which a student has an OAI much lower than the modelled OAI for that student's particular combination of levels of achievement in particular subjects.

For a substantial proportion of the OP-eligible population, we manually scrutinised data as an extra check of the integrity of OP calculations. First, computer searches of the data identified students with an OAI much lower than the modelled OAI for their particular combination of subjects and achievements. This search was performed for every student in the state and involved comparing them with every other student with a sufficiently similar combination of subjects.

Manual checks of over 7000 plots showing these individual student data indicated that further investigation was warranted for 1317 of these students, on the basis that these students' OAIs were possibly odd. For these students we printed an assessment record that showed semester units, levels of achievement, and SAIs in Authority subjects. We noted the panel comments on the relevant Forms R6, and found the student's approximate place within the achievement band for each subject.

After we analysed the data for these students we found 375 cases for which a change to the student's OAI was justified before the issue of SEPs. The OAIs of these 375 students were increased to the point where they would not be considered outliers. This usually meant a change of one OP band.

6. What special-case calculations were conducted?

We carried out special calculations when:

- school-groups had a high proportion of visa students (see Table 2)
- school subject-groups had a high proportion of visa students (see Table 3).

These calculations followed procedures approved previously by the Queensland Board of Senior Secondary School Studies on the recommendation of the Technical Advisory Subcommittee of the Moderation Committee.

7. What was done to print and dispatch SEPs?

SEPs are printed-in house. This provides flexibility for variable printing of the Senior Certificates, which contained millions of items of information and more permutations of that information than ever before. In-house printing also provides easy access to programmers during the development phase, as well as the printing phase. Programming problems that appear during the printing of SEPs are resolved as they occur.

We extensively checked the quality of all certificates before we dispatched them. We put a quality-control loop in place to scrutinise every SEP printed. We made necessary changes to computer programs. (One aspect that could not be entirely resolved during this quality-control phase was the naming of subjects supplied by TAFE. Some TAFE subjects have names that are abbreviated in a way that readers of the Senior Certificate who are not familiar with these VET terms would find difficult to understand or to differentiate between when names are very similar. Before printing the certificates, QSA staff identified and corrected spelling errors and inconsistencies in abbreviations and punctuation of the names of TAFE subjects.)

All timelines were met.

The scheduled date for posting the SEPs was 14 December 2007. To maximise the probability that all students would receive their certificates on the same day, posting occurred over two days — Thursday 13 December for students living interstate, overseas, and in remote areas of Queensland; and Friday 14 December for the remaining students. In 2007, SEPs were posted to 545 Australian postcodes and five overseas zones.

There were no major problems with the schedule, and 41 906 Senior Certificates and 26 049 TE Statements (including those for visa students) were posted. We used computer programs to ensure that every SEP had a precise known position in the packing production line.

In 2007 the QSA provided Year 12 students with access to their OP and FPs through the QSA's Smart OP service via the QSA website, and direct to students' mobile phones via SMS. The Smart OP service was available from 9am Saturday 16 December 2007 to Monday 15 January 2008. To ensure that students could access their OP and FPs from 16 December, students needed to register between 8 October and 13 December 2007. This year 9409 students registered (in 2006 7571 registered). From Saturday 16 December 2007 to Monday 15 January 2008, there were 33 407 visits (in 2007, 29 107 visits) to the Smart OP website. The number of visits included successful and unsuccessful logins, as well as multiple visits by the same student. For the same period, 2337 students (in 2006, 2612) received their OP and FPs by SMS. Between Saturday 16 December and Friday 22 December 2007, more than 1000 calls were made to the general enquiry number. QSA staff dealt with various enquiries from students and their parents — issues ranging from lost PIN numbers, to ranks, changing preferences based on the OP received and tertiary entrance. QSA staff answered queries throughout the Christmas and New Year period, except for the public holidays.

As well as the information made available to schools on the website (listed in section 2), on Tuesday 19 December 2007, details of students' results for each school — levels of achievement, OPs, FPs, and QCS Test grades — were posted on the QSA's schools website. Because the privacy of students and schools must be safeguarded, it was necessary to maintain security over internet data transfers and to continue to develop the effective use of user identities and secure passwords.

8. What tertiary admissions data were electronically transmitted?

The QSA sent Year 12 and tertiary entrance data electronically to all tertiary admissions centres and interstate universities that had received applications from Queensland students. The interstate admissions centres submitted to the QSA the names of Queensland students who applied through them, and information about these students only was released.

We supplied the Queensland Tertiary Admissions Centre (QTAC) with a file of Year 12 student results (external and internal) by Friday 14 December 2006. Interstate admission centres were sent data from Monday 17 December 2006, and interstate requests for student data are still being made.

In 2007, 1398 Queensland students applied to interstate universities (in 2006 and 1997 there were respectively 1087 and 1275 students). In 2007, we used the Australian Tertiary Admissions System to convert the OPs of students applying to interstate universities. The system uses the common Interstate Transfer Index (ITI), which is a common scale used to convert the TE rank of one state to that of another. Each state is responsible for the conversion from home state TE rank to ITI. This conversion is based on a nationally approved combination of two methods previously used for interstate equivalences — the candidature method and the age-cohort method. The approved approach is based on principles appropriate to the inherent imprecision of both the starting data and the nature of conversion from one state rank to another.

9. What was done to process applications for verification (Senior Certificate) and review (TE Statement)?

Students had until Monday 8 January 2008 to lodge an application for verification of their Senior Certificate and to seek review of their OPs and FPs. Late applications were accepted on the next day.

In 2007 there were 344 of these applications received, which was an increase of 12 from the 2006 figure (336).

Students' applications can be classified into five main categories:

1. Requests to change names

We received 16 requests to change names on Senior Certificates.

2. Verification of results in Authority and/or Authority-registered subjects

We received 56 applications related to differences between the levels of achievement stated on students' exit statements or school reports and those shown on their Senior Certificates. We asked schools to verify results.

3. Correction of results in Recorded subjects

We received 104 requests to correct results in Recorded subjects.

4. Review in relation to OP/FPs

We received 228 OP review applications (7 more than the 221 applications in 2007). In each case, we compared students from across the state who had similar results in a similar combination of subjects. We further checked available information when this preliminary check showed the student who applied for the review had an OAI apparently much lower than the OAIs of other students with similar results in a similar combination of subjects. A panel of senior QSA officers examined each case and determined whether the calculation of a correction factor (to bring the student's OP into line with those of others with similar results) was warranted.

5. Other

Applications by students for verification of their QCS Test results led to checks that an individual grade was correctly calculated. Since multiple marking of QCS Test papers had already occurred, there was no further re-marking.

A summary of the successful applications for verification and/or review (correct at the time of writing) is given in Table 5 (final figures may be different).

Table 5: Amendments to student results (as of 31 March 2007)

Changes to levels of achievement (number of students)	
• Authority subjects and Authority-registered subjects	22
• Recorded subjects	41
• external subjects	1
Changes to OPs	2
Changes to FPs	0
Changes to QCS grades	0

As soon as amendments were available, the QSA transmitted them to QTAC and tertiary admissions centres in other states.

10. Conclusions

The process of issuing the SEPs in 2007 was as complex as previous years. The amount and complexity of the information collected and reported, as well as the quality assurance required, continues to require careful management and quality control. A lot of this complexity comes from the reporting of accredited vocational education on Senior Certificates, where information is gathered from many different providers. While the activities involved are diverse and often complex, the goal of providing a high-quality credentialling service to students has been met. New challenges lie ahead in 2008 when the Queensland Certificate of Education and Senior statements are issued for the first time.