

Calculating OPs

A step-by-step guide

Comparing the achievements of two students who received an OP1

The OP (Overall Position) is Queensland's main tertiary entrance rank for school leavers. OP1 is the highest and OP25 the lowest.

Ben and Emma attended different schools with very different student cohorts but both received an OP1 rank based on their achievements in Authority subjects. They are just two of the roughly 26,000 students who receive an OP each year. Because 50% of those students choose a unique combination of subjects and complete different assessment tasks in approximately 400 Queensland secondary schools, a complex set of calculations is required to enable fair comparisons.

The diagram in figure 1 illustrates the five steps in the calculation of Ben and Emma's OPs — focusing on the scaling processes required to fairly and accurately compare their achievements with all other students who received an OP in that year.

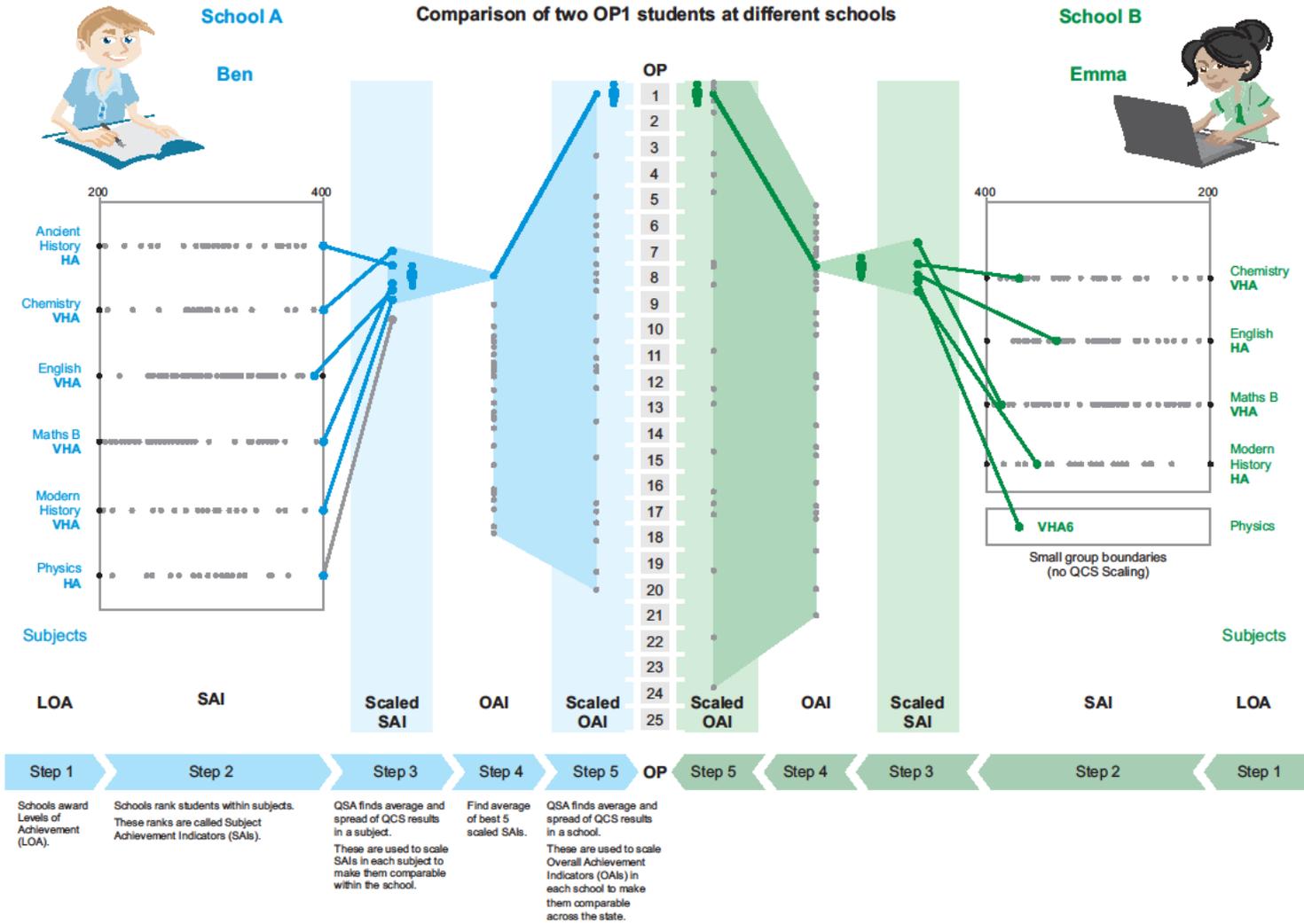
Step 1: Schools award levels of achievement

Before tertiary entrance ranking can occur, schools need to award levels of achievement (LOAs) for students in each of their subjects.

LOAs are awarded by schools based on a student's achievement in a range of school-based assessments. Before LOAs are awarded, representative samples of student assessments are moderated by external panels of trained teacher reviewers. Queensland's moderation system involves a range of quality assurance processes, including district review panels reviewing student assessments (known as folios) and then advising schools about the extent to which their assessment of student achievements matches the standards described in syllabuses. State review panels then look at a sample of folios to ensure that the same standards are being implemented in all districts.

Ben and Emma studied similar Authority subjects. Although they both performed well, there were differences in their LOAs in some subjects.

Figure 1 Comparison of two OP1 students at different schools



Step 2: Schools rank students within subjects

LOAs alone are too broad to calculate OPs, so finer-grained comparisons of student achievement are necessary. These comparisons are provided by subject achievement indicators (SAIs).

SAIs are a numerical way of showing how students have achieved compared with others in their subject groups, within their school. At the end of Year 12, teachers assign each student a number between 400 (highest) and 200 (lowest) to show their position in the rank order of students in each subject.

SAIs are the primary information used to calculate OPs.

Ben's SAIs show that he was one of the highest achievers at his school in each of the subjects he studied. In contrast, Emma did not top any of her subjects, and in English and Modern History she was nearer to the middle of the subject-group.

Teachers do not assign SAIs for small (1–9 students) or intermediate (10–13 students) subject groups. In such cases, student placement on the Form R6 is used instead of SAIs. This happened for Physics at Emma's school.

Step 3: Scaling SAIs

Over two days in Term 3, OP-eligible Year 12 students sit the Queensland Core Skills (QCS) Test. The test assesses student achievement in the 49 Common Curriculum Elements, independent of specific subject content.

Following the test, the QSA looks at the average and spread of students' QCS Test results within a subject group in a school. We use this information to scale students' SAIs. The scaling process provides a comparison of the achievement of students in one subject in a school with the achievement of students in other subjects in the same school.

Step 4: Overall Achievement Indicators — a within-school rank

Scaled SAIs only enable comparison of achievement between subjects within a school. They do not allow comparison of achievement between schools within a subject.

To produce a single rank order of students within a school, an Overall Achievement Indicator (OAI) is calculated.

The OAI is determined using a student's best scaled SAIs, across 20 semester units. For most students this means their best five subjects taken for the four semesters of Years 11 and 12.

The OAIs indicate that Ben was the top ranked student at his school. Several students at Emma's school were ranked above her.

Step 5: Scaling OAIs

The second stage of scaling, the between-school stage, allows rank orders to be compared across all schools. To do this, the QSA finds the average and spread of QCS Test results in a school.

Scaled OAIs place students in a single rank order across the whole state — from 1 to approximately 26,000. This is obviously a greater degree of precision than it is reasonable to report. Students are, therefore, grouped together into 25 OP bands. 'Banding' also ensures that the results are relatively stable and not vulnerable to minor uncertainties in subject results. Ben and Emma did not achieve to exactly the same standard to receive their OP1s but to a general high standard.

The cut-off for each OP is set annually so that there is approximate comparability with the standard of performance required to reach that OP in the previous year. We can be confident that Ben and Emma have achieved just as highly as other OP1 students have in previous years.

Summary

Clearly the calculation of OP ranks — indeed any tertiary rank — must involve a way of comparing different students' achievements to ensure that a student's OP does not depend on the school they attend or the subjects they choose. Each Australian state and territory has resolved this issue in its own way using some form of scaling.

Ben's school had a low QCS Test mean but he was at the very top of most of his subjects and some distance ahead of his classmates. This is what you would expect to see when a very strong student is in a group of predominantly lower achieving students. Ben is not disadvantaged by being in such a group because the real differences in his subject performances are represented when his teachers assign SAIs. Although the QCS Test mean was low for his cohort, Ben's SAIs place him a long way ahead of the middle of each SAI distribution.

Emma was part of a much stronger group of students. There were many OP1 students in her school and she was quite a way from being the top student in any of her subjects. Although Emma's results are nearer to the middle of her cohort than Ben's, her colleagues are, on average, stronger achievers.

If the competition in a school is strong, a student needs to be just ahead of the other students to get an OP 1. However, if the competition is not strong, the top students need to be a long way ahead of the other students.

More information

If you would like more information, please visit the QSA website <<http://www.qsa.qld.edu.au/570.html>>. Alternatively, phone (07) 3864 0363 or email the Analysis and Reporting Branch at Analysis.Reporting@qsa.qld.edu.au