Random Sampling 2002:
A quality assurance process for moderated school-based assessment
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Foreword

Each year the random sampling project provides information about standards evident in a random sample of students’ exit folios. As such, it is an integral part of the Queensland Studies Authority’s moderation process and helps ensure that comparability of school-based assessment is maintained.

This report outlines issues arising from the review of a randomly selected set of folios from students completing Year 12 in 2001 in a randomly selected set of school subject-groups. The review of folios is conducted by teachers of the same subject in districts other than the district in which the sampled folios are completed.

Random sampling was one of the Board’s quality assurance procedures and remains an integral part of the moderation process now carried out by the QSA. From now on in this report, the activities carried out by the Board in 2001–2002 will be presented in the present tense.

This report was prepared by officers of the Queensland Board of Senior Secondary School Studies (“The Board”) before the formation of the Queensland Studies Authority (QSA), and it refers to processes and personnel that were part of the Board.

I would like to acknowledge all those who were involved in producing this report — random sampling panel members, Board agents (now district coordinators) and officers from the Moderation Section of the former Board. The report was compiled by David Kelly (Research Officer, Policy & Evaluation). Dr David Walker (Research Officer, Policy & Evaluation) provided data analyses.

I commend this document to officers of the QSA, and administrators and staff of schools in Queensland. It provides valuable information about the application of standards of assessment across the State. In addition, it provides information about the effectiveness of processes in place that help ensure comparability of students’ achievement reported on the Senior Certificate.

Peter Luxton

Director
Summary

Information from random sampling enables the Board to develop an understanding of the operation of Board procedures at a system level. In addition, the report of random sampling offers information about the nature and value of the random sampling process itself as a quality assurance mechanism. Information from random sampling can be used to modify and improve procedures to help ensure that students receive the best possible educational credentialling.

This report of the 2002 random sampling process is organised around four key questions:
1. How does random sampling fit within the moderation process?
2. What are the aims of random sampling?
3. What do the random sampling data show?
4. What conclusions can be made from random sampling?

In October, for each Board subject, the Board’s verification procedures for moderation of student achievement require schools to provide folios of the work of a minimum of nine students. The folios reviewed during verification are chosen by the school and usually represent typical threshold and mid-range performances in each level of achievement. Review panels provide advice about standards evident in these folios.

During October verification, the folios that the district review panels see do not usually contain all of the students’ work on which level of achievement decisions are based. However, random sampling panels view students’ exit folios containing all of the work on which level of achievement decisions are based, including assessment tasks completed after October verification.

Information is also collected each year during random sampling about an issue related to the assessment and certification of students’ achievements. In 2002, panels were asked to make judgments about the quality of assessment tasks completed after verification folios were compiled.

The data on the placement of folios suggest a general pattern from 1994 to 2002 of about the same level of agreement between schools and random sampling panels. The data also show that this pattern is generally similar across subjects and across districts.

Of the 309 school subject-group submissions reviewed at random sampling in 2002, serious difficulties with accountability or standards occurred in 10 — a rate of 3 per cent. Therefore, it is reasonable to suppose that across all subject-groups the Board’s procedures were at least 95 per cent successful in providing advice about standards resulting in further action by schools.

Based on this study it seems reasonable to conclude that:
- the rate of difficulties with exit levels of achievement is probably of the order of 1 per cent to 5 per cent
- the Board’s procedures were probably at least 95 per cent successful in providing schools with suitable advice about standards which results in further action by schools
- in about 4 per cent of cases panels give substantially different advice in response to October verification submissions and random sampling submissions.

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1 The number of folios varies in small subject-groups in which fewer than nine students have completed the subject.
How does random sampling fit within the moderation process?

Understanding the nature and possibilities of random sampling as a procedure should begin with understanding the Board’s procedures for maintaining standards. The ways in which random sampling can provide supplementary and new information about standards that schools apply may be better understood in the context of these existing procedures.

Moderation is the process by which school decision making about standards of student achievement in Board subjects is verified by matching student performance in each subject with stated criteria and standards in the school’s accredited work programs. The process leads to the awarding of a level of achievement on a Board-issued certificate.

Two major elements of moderation are:

- the monitoring of submissions of student work midway through the course of study (i.e. February monitoring)
- the verification of the application of standards towards the end of the course (i.e. October verification).

District panels review student work in October. Random sampling panels review student work in February of the following year. Frequently, a district review panel and a random sampling panel may comprise the same or a similar group of people. Their functions differ in that panels review student work from their own district in October but review student work from a different district during random sampling.

This is the ninth annual report of random sampling in Queensland. The random sampling process was trialled in 1994 as one method for assessing the effectiveness of the Board’s moderation procedures. The processes for random sampling developed for this trial have now become an integral part of moderation procedures.

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2 For complete details of the moderation process, see The Moderation Handbook 1999, QBSSSS.
What are the aims of random sampling?

The random sampling process aims to provide:

• an estimate of the statewide rate of “serious difficulty” with school submissions; that is, either the placement of a folio by the random sampling panel differed by two levels of achievement from the exit level, or the random sampling panel provided strongly negative advice about standards evident in the school’s submission
• information about the rate of disagreement over standards of assessment applied to student work
• advice about the schools’ assessment standards for exit folios.

To achieve this, random sampling panels examine each of the folios in a school’s submission, and decide a level of achievement and a rung placement within that level of achievement. The panel is also requested to comment on the standards that are evident within the folios of student work.

The process involves a consideration of:

• comparisons between the random sampling panels’ placements of students’ folios within the level of achievement and the schools’ exit placement of the same students’ folios
• the similarities and differences between the judgments and comments of panellists at October verification about a set of “typical” folios provided by schools, and the judgments and comments by random sampling panels from a different district about a different set of student folios from the same school.

Inferences can be drawn from information gathered during the random sampling process about student work not seen at October verification.

In addition, the random sampling process offers information about difficult review cases, for example the likely proportion and nature of situations for which problems identified at October verification were not appropriately acted upon and this was reflected in the school’s placement of folios at exit. As a process that offers information about the likely percentage of these instances in the wider Queensland system (as well as cases in which the random sampling panel identifies serious problems which the October verification panel did not identify), random sampling provides information for further evaluation of the Board’s procedures.

Using information from random sampling, we can make judgments about the success of some of the Board’s moderation procedures. Also, this information can be used to further strengthen the Board’s moderation procedures.
What do the random sampling data show?

Random sampling involved the scrutiny of a selection of student exit folios by panels of teachers from outside the district of the school providing the submission. Details of the methods for folio selection and distribution are given in appendix 1.

Data collected from the panels as part of this random sampling project are organised in three ways:

- folio placement decisions
- comments about submissions
- judgments about the quality of assessment tasks completed after verification folios were compiled.

For the purpose of the random sampling process, the district in which the school is located is called the “home district”; home district panels view the school submission during February monitoring and again during October verification. The other district is called the “random sampling district”.

What folio placement decisions did panels make?

Random sampling panels examined school submissions and for each folio in those submissions the panel decided a level of achievement and rung placement. These decisions were indicated by the placement of the folio name on the 50-point level of achievement ladder provided on the Panel Consensus Form.

What is the overall placement of folios?

It is to be expected that, for some folios, random sampling panels will differ from schools in their judgments about the level of achievement and rung placement.

School and panel placements are qualitative, interpretative judgments; some variation should be expected between them. Little or no variation in levels and rungs would be expected if random sampling panels made judgments by perusing teachers’ comments and marks in folios rather than actual student work. The fact that some variation in judgment is found is part of the evidence that panellists largely do the job asked of them — make complex, on-balance judgments based on student work.

Figure 1 shows the relationship between the inferred placement of folios at exit.

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3 It is important to note that the exit rung placement can only be inferred for folios from OP-eligible students. The Board does not collect information about folio rung placements within levels of achievement for students in large school subject-groups. Inferring rung placements involves using Form R6 and SAI information to find the rung placement using a computer interpolation method. A manual check of a sample of inferred exit rung placements suggests that the method gives results not usually more than one rung different from the school’s placement on the Form R6. From this point in the paper the term “rung placement” refers to rung placement inferred using this method.
and the placement of folios by the random sampling panel. For the purpose of this plot, and for the following quantitative analysis, the five levels of achievement bands (and the 10 rungs within each of those bands) are converted to a 50-point scale. Thus, a folio assessed as rung VLA 1 (the lowest rung within the VHA band) is positioned as 1, and a folio assessed as VHA 10 (the highest rung within the VHA band) is positioned as 50.

The dots in figure 1 may represent the placement of more than one folio. The dot size is dependent on the number of folios represented by that position. The larger the dot, the greater the number of folios with the same relative placement.

The long diagonal line in figure 1 represents the position of an exact match ($y = x$) between the exit and random sampling placements. Dots below the line represent folios placed at a lower rung by the random sampling panel than by the school. Dots above the line represent folios placed at a higher rung by the random sampling panel than by the school.

The overall cluster of larger dots around the line indicates that there is a strong relationship\(^4\) between schools’ exit placements and random sampling panels’ placement decisions. If there were an exact match between the school and the random sampling placements all the dots would be on the line. A greater number of folios are below the line, particularly for exit HA and VHA and for the higher rung placements within each of these bands. This, along with a slightly greater number of folios placed by panels above the school’s rung position for exit VLA folios (particularly for folios at the lower rungs within the band), suggests that the random sampling panels tend not to place folios towards the extremes of the level of achievement scale.

[See next page for figure 1: Comparison of folio placements, school and random sampling.]

\(^4\) There exists a correlation of 0.95 between exit folio rung placement and random sampling folio rung placement.
A natural grouping exists for the placement of folios according to the exit level of achievement awarded by schools. In figure 1 the boundaries for these groups are shown as the faint dashed vertical lines. The relationship between the exit and random sampling placement of folios within each level of achievement is, as would be expected, weaker\(^5\) than the overall relationship across all the levels. This weaker relationship is shown by comparing the match between the line showing perfect agreement ($y = x$) and the line of best fit\(^6\) for the placement of folios in each level of achievement (the short solid lines).

Many of the cases of variation of judgment involving placements within two rungs of each other are properly matters of opinion (and/or a consequence of the procedure for inferring exit placements). In other words, panellists’ placements in these cases are likely to occur as the result of variation in professional judgments, rather than fundamental disagreements about standards. Even some disagreements about rung placement that place a folio in a different level of achievement (for example, if a folio is placed just across a threshold of two levels) are not likely to constitute questions of differing standards. Of course, larger differences in rung placements are more likely to be about standards.

Figure 2 shows that the placement of folios by the random sampling panels is most

\(^5\) The correlation between exit and random sampling placement within each level of achievement is: VLA 0.46; LA 0.51; SA 0.62; HA 0.61; and VHA 0.70.

\(^6\) The lines of best fit in this case represent the least-square estimated line for the folios in each level of achievement.
likely (75 per cent) to be within two rungs of the exit placement. For the analyses in this report, rung difference is determined by subtracting the rung placement at exit from the random sampling panel placement. Rung differences greater than 0 (and shown above 0 in figure 2) indicate that the random sampling panels placed the folio on a higher rung position than did the school at exit, while differences less than 0 indicate a lower placement by random sampling panels.

Figure 2: Random sampling and exit rung placement differences

An overview of folio placements presented in figure 3(a) shows a trend of decreasing sample size in the collection of folios from 1995 to 1999, an increase in 2000, a small decline in 2001, and a further decline in 2002. Changes in the number of folios from year to year result from changes in the number of large school subject-groups able to be sampled\(^7\) from each of the selected subjects. The most important consideration is whether the sample size is large enough to gather enough panel advice to be able to use the results as a quality-assurance measure. The number of folios sampled in 2002 was sufficient to form statewide estimates of cases of serious difficulty.

\(^{7}\) There is usually a maximum of 20 school subject-groups selected for random sampling in each subject. However, fewer groups are sampled when there are fewer than 20 school subject-groups with 15 students or when there are fewer than 10 district panels in the State for a subject.
The level of agreement in 2002 about the level of achievement placement of folios by schools and random sampling panels is in line with the level of agreement of previous years (see figure 3(b)). This is true for all folios collected and for the subset of OP-eligible folios. The analyses in the following sections are based on the folios from OP-eligible students.

**What about folios placed within the same level of achievement?**

The data show that some within-level-of-achievement differences occur between the placement of folios at exit and the placement of folios by the random sampling panel. A within-level-of-achievement difference means that the random sampling panel placed the folio in the same level of achievement as did the school, but on a different rung. Of course, an examination of within-level-of-achievement differences includes the folios placed on the same level and rung by the school at exit and the random sampling panel, that is, folios with no difference in placement.

It is possible to examine the judgments about rung placement of folios by grouping differences as follows:

- no difference
- 1 or 2 rungs difference
• 3 to 7 rungs difference
• more than 7 rungs difference.

The random sampling panels placed 86 per cent of all folios in the same level of achievement as the schools did at exit. The distribution of rung differences, for folios assigned the same level of achievement by the panel and the school, is shown in figure 4. This clearly shows that the majority of folios are placed similarly by both the random sampling panel and the school.

**Figure 4: Differences in folio placement within a level of achievement band**

![Graph showing differences in folio placement](image)

The random sampling panels placed about 70 per cent of folios from OP-eligible students in the same level of achievement, and either on the same rung or no more than two rungs away from where the school placed the same folios at exit. Figure 5 shows that the placement of folios in the 2002 random sampling is similar to the placement of folios in the five previous years.

**Figure 5: Distribution of within-level-of-achievement rung differences 1995–2002**

![Graph showing distribution of rung differences](image)
What about folios placed in a different level of achievement?

The random sampling panels placed 14 per cent of folios in a level of achievement different from the schools’ exit placements.

The extent of rung differences among folios placed in a different level of achievement is considered in comparison to previous years. Figure 6 shows, for folios placed in different levels of achievement, the occurrences and size of rung difference over nine years. There are two notable variations: the higher proportion of folios with 1–7 rungs difference in the initial year (1994), and the drop in proportion of the 3–7 rung differences of folios in 1996.

Year-to-year variations in these results may reflect changes in:
- the selection of subjects involved
- the number of folios
- the organisation of random sampling.

Figure 6: Distribution of rung differences for folios placed in a different level of achievement 1994–2002

The distribution of rung differences, for folios placed in a different level of achievement, is shown in figure 7. Of course, this shows no folios with exact agreement (that is, no folios are shown as having zero rung difference) between the school and the random sampling panel placements, because folios that are in a different level of achievement cannot be on the same rung.

Figure 7 shows that roughly 39 per cent of the folios that are placed into a different level of achievement by a random sampling panel differ from exit placements by only one or two rungs. This suggests that folios placed into a different level of achievement are often at the level of achievement threshold.
To estimate the rate of variation in the judgments statewide, an adjustment needs to be made for the predominance of VHA and HA folios in the sample. Table 1 presents data for:

- all rung differences for OP-eligible students’ folios placed in a different level of achievement
- differences of between three and seven rungs for OP-eligible students’ folios placed in a different level of achievement
- differences of more than seven rungs for OP-eligible students’ folios placed in a different level of achievement.

An estimate of the statewide value, adjusted for stratification, is also given in table 1 for each category of difference.

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8 See How are folios selected? in appendix 1 for an explanation of this predominance.
Table 1: Rung differences for folios from OP-eligible students placed in a different level of achievement

a) Differences for folios placed in a different level of achievement

<table>
<thead>
<tr>
<th></th>
<th>VLA</th>
<th>LA</th>
<th>SA</th>
<th>HA</th>
<th>VHA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>19.7%</td>
<td>7.4%</td>
<td>2.5%</td>
<td>1.7%</td>
<td>0.0%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Down</td>
<td>0.0%</td>
<td>3.3%</td>
<td>5.8%</td>
<td>12.6%</td>
<td>22.7%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Difference in sample</td>
<td>19.7%</td>
<td>10.7%</td>
<td>8.3%</td>
<td>14.2%</td>
<td>22.7%</td>
<td>14.3%</td>
</tr>
<tr>
<td>No. in all groups sampled</td>
<td>330</td>
<td>1255</td>
<td>4217</td>
<td>3889</td>
<td>1122</td>
<td>10813</td>
</tr>
<tr>
<td>Estimated total difference</td>
<td>65</td>
<td>135</td>
<td>349</td>
<td>554</td>
<td>255</td>
<td>1357</td>
</tr>
</tbody>
</table>

Statewide estimated difference in level of achievement, adjusted for stratification: 12.6 per cent.

b) Differences of between three and seven rungs and placed in a different level of achievement

<table>
<thead>
<tr>
<th></th>
<th>VLA</th>
<th>LA</th>
<th>SA</th>
<th>HA</th>
<th>VHA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. in sample</td>
<td>61</td>
<td>270</td>
<td>677</td>
<td>843</td>
<td>559</td>
<td>2410</td>
</tr>
<tr>
<td>Difference in sample</td>
<td>7</td>
<td>12</td>
<td>22</td>
<td>59</td>
<td>57</td>
<td>157</td>
</tr>
<tr>
<td>% of difference</td>
<td>11.5%</td>
<td>4.4%</td>
<td>3.2%</td>
<td>7.0%</td>
<td>10.2%</td>
<td>6.5%</td>
</tr>
<tr>
<td>No. in all groups sampled</td>
<td>330</td>
<td>1255</td>
<td>4217</td>
<td>3889</td>
<td>1122</td>
<td>10813</td>
</tr>
<tr>
<td>Estimated total difference</td>
<td>38</td>
<td>56</td>
<td>137</td>
<td>272</td>
<td>114</td>
<td>617</td>
</tr>
</tbody>
</table>

Statewide estimated difference in level of achievement by three to seven rungs, adjusted for stratification: 5.7 per cent.

c) Differences by more than seven rungs and placed in a different level of achievement

<table>
<thead>
<tr>
<th></th>
<th>VLA</th>
<th>LA</th>
<th>SA</th>
<th>HA</th>
<th>VHA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. in sample</td>
<td>61</td>
<td>270</td>
<td>677</td>
<td>843</td>
<td>559</td>
<td>2410</td>
</tr>
<tr>
<td>Difference in sample</td>
<td>3</td>
<td>5</td>
<td>9</td>
<td>16</td>
<td>18</td>
<td>51</td>
</tr>
<tr>
<td>% of difference</td>
<td>4.9%</td>
<td>1.9%</td>
<td>1.3%</td>
<td>1.9%</td>
<td>3.2%</td>
<td>2.1%</td>
</tr>
<tr>
<td>No. in all groups sampled</td>
<td>330</td>
<td>1255</td>
<td>4217</td>
<td>3889</td>
<td>1122</td>
<td>10813</td>
</tr>
<tr>
<td>Estimated total difference</td>
<td>16</td>
<td>23</td>
<td>56</td>
<td>74</td>
<td>36</td>
<td>205</td>
</tr>
</tbody>
</table>

Statewide estimated difference in level of achievement by more than seven rungs, adjusted for stratification: 1.9 per cent.

Table 1(a) shows that folios awarded VHA at exit are most likely (22.7 per cent) to be placed in a different level of achievement band by the random sampling panel. Table 1(b) shows that folios awarded SA at exit are less likely (3.2 per cent) to be placed in a different level of achievement with a difference of more than two rungs than are those at any other exit level. Table 1(c) shows that folios awarded a VLA at exit are more likely (4.9 per cent) to be placed in a different level of achievement with a difference of more than seven rungs than are folios awarded any other level of achievement.

The data presented in table 1(a) suggest that folios awarded SA by schools at exit are least likely to be placed by random sampling panels into another level of achievement. Conversely, folios at the upper extreme of the scale (i.e. VHA folios) are most likely to be placed in a different level of achievement band.

Figure 8 plots the differences between the random sampling and exit rungs for folios placed in a different level of achievement. This type of plot is a useful device for summarising information, such as differences in the rung placement of folios, by giving a visual representation of the data.
In figure 8 consider the plot for SA as an example of how to interpret the figure:

- the black diamond indicates the median rung difference, –2; that is, the middle-ranked SA folio placed in a different level of achievement is placed by the random sampling panel two rungs lower than the school’s exit rung placement

- the horizontal line bounded by two short vertical lines represents the middle 50 per cent of values, located between –4 and 1; that is, the middle-ranked 50 per cent of folios have been placed by random sampling panels between four rungs lower and one rung higher than the school’s exit placement

- the dotted line extending between –11 and 8 represents the spread of most (usually about 95 per cent) of the values, excluding, in some cases, outliers (values placed considerably away from the distribution of most other values); that is, most of the SA folios placed in a different level of achievement by random sampling panels are placed between 11 rungs lower and eight rungs higher than the school’s exit placement

- the disconnected “+” symbols indicate outliers (values placed considerably away from the distribution of most other values); outliers are represented for SA folios placed 24 rungs lower and 9 rungs higher by the random sampling panel than the school’s exit rung placement.

Figure 8: Rung differences for folios placed in a different level of achievement, by the exit level of achievement

Figure 8 shows only the data for decisions where folios were placed in a different level of achievement by random sampling panels than by the school. Consequently, the data cannot show perfect agreement in rung placement decisions between panels and schools. Differences in placement for VLA and VHA folios are shown in
only one direction because VLA folios can only be placed higher to a different level of achievement and VHA folios can only be placed lower. The data in figure 8 indicate that placements in different levels of achievement are most consistent for folios awarded a VHA by the school at exit. At least 50 per cent of exit VHA folios judged to be another level of achievement by the random sampling panels differ from the exit placement by between two and five rungs. Few exit VHA folios placed within another level of achievement differ by more than nine rungs.

What about the placement of folios from different subjects?

Placement of folios by schools at exit and by the random sampling panels can be compared by subject. This provides information about the comparability of judgments for subject-specific criteria across different districts in the State.

Figure 9 presents the random sampling panel placement and school exit placement of folios by subject. Eleven of the subjects sampled involved 20 submissions. Technology Studies involved 34 submissions, Music 15, Film & Television 14, Study of Religion and Marine Studies 10, Business Organisation & Management and Health Education 6, and Study of Society 4. For the different subjects the distributions of folio differences are mostly similar. In particular, no median value is positive.

Figure 9 shows that in a number of subjects, random sampling panels consistently placed folios on the same rung or one rung lower than the school placed them at exit, because the medians all lie at or just below the zero rung difference. In Drama, Business Communication & Technologies, Marine Studies, Multi-strand Science, Biological Science, and Economics, random sampling panels placed at least
50 per cent of folios within one rung of the exit placement. The panels placed at least 75 per cent of the folios in six subjects (Music, Art, Health Education, Biological Science, Ancient History, and English) on the same rung or lower than the school’s exit placements.

It is important to note that while the random sampling panels generally placed the folios lower than the schools (medians are at or below zero), most subjects had at least the middle 50 per cent of the folios placed within two rungs of the inferred exit placement.

What about the placement of folios from different districts?

Random sampling involves collecting information that provides an opportunity to investigate whether panels from different districts across the State apply assessment standards in similar ways. It also provides an opportunity to investigate whether the Board’s review procedures are effective to a similar degree in each district.

These issues can be considered by analysing the differences in the placement of folios by schools and the random sampling panels according to district. For the purposes of analysis, the data are viewed in terms of either the “home” district (the district in which the school is located) or the “random sampling” district (the district in which the random sampling panel is located).

Figure 10 shows the placement of folios by home district. It shows, for example, that random sampling panels in different districts placed the middle-ranked 50 per cent of folios across all subjects from districts 1 and 6 within one rung of the school’s exit placements. This indicates how other districts apply standards in different subjects to folios from the home district. Notably, for all districts the random sampling panels placed at least the middle 50 per cent of folios within two rungs of the school’s exit placement. Moreover, the median value for five of the 11 districts represents placement on the same rung as the exit placement.

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9 For the purpose of this analysis the names of districts are re-ordered and then given numbers. This renumbering process does not substantively alter the information presented within this report.
Figure 10: Differences in folio rung placement by home district

Figure 11 shows the placement of folios by the random sampling panels. This plot, for example, shows that the random sampling panels from districts 1 and 6 placed the middle ranked 50 per cent of the folios received across all subjects within one rung of the exit placement. Random sampling panels from all districts except 4, 5 and 8 placed at least 50 per cent of folios within two rungs of the school’s exit placement. Random sampling panels from districts 4, 5 and 8 placed at least 50 per cent of folios within three rungs of the school’s exit placement.
The similarity of these two plots indicates that panels (and schools) from different districts across the State tend to apply assessment standards in similar ways. Also, they suggest that the Board’s review procedures are effective to a similar degree in each district across the State.

What about the placement of folios across school subject-groups?

The random sampling data provide information about differences in folio placement decisions across school subject-groups.

The judgments about rung placements made by assessing teachers and the random sampling panels that consider the same set of folios can be compared within each school subject-group to find:

- the median (or middle) rung difference between the exit and random sampling placements and whether this indicates that the random sampling placement is lower (a median placement by the panel more than one rung lower than exit), stable (within one rung of exit), or higher (more than one rung higher)
- the extent of difference between the exit and panel placements and whether the range for the middle 50 per cent of differences is large (more than two rungs) or small (two or fewer rungs).

These categories are defined fairly stringently to maximise the amount of information about differences in judgments that can be used. Table 2 indicates that for 70.3 per cent of school submissions the random sampling panel placed at least half the folios within two rungs of the exit placement (i.e. small variation), and that for 71.6 per cent the median placement was within one rung of exit (i.e. stable). In
56.5 per cent of school submissions the random sampling panels placed at least half the folios within two rungs of the exit placement.

**Table 2: Differences in folio placement within school subject-groups**

<table>
<thead>
<tr>
<th>Median rung placement difference</th>
<th>Variation within the school subject-group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large</td>
</tr>
<tr>
<td>Higher</td>
<td>2.0</td>
</tr>
<tr>
<td>Stable</td>
<td>15.0</td>
</tr>
<tr>
<td>Lower</td>
<td>12.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29.7</strong></td>
</tr>
</tbody>
</table>

**What comments did panels make about school submissions?**

The random sampling panels were asked to comment on the standards evident within each school submission as applied by schools.

**What comments did panels make about standards evident within the school submissions?**

The random sampling panels were asked to provide written comments on significant positive and/or negative aspects of each school submission. They were also asked to respond, using a five-point scale, to six statements about each school’s application of standards and accountability for decision making. The six statements are as follows:

1. All mandatory subject matter is covered and assessed by exit.
2. The assessment instruments reflect the intent of the syllabus.
3. The assessment instruments allow discrimination between students of differing abilities.
4. The grading/marking of student work is appropriate.
5. Global/overall standards for each assessment criterion (as shown on completed student profiles) reflect the relevant syllabus standards.
6. Sufficient information has been provided to enable decisions to be made about student achievement.

Figure 12 shows responses to these statements as provided on each panel’s consensus form. Three panels did not complete this section of the form.
The data presented in figure 12 indicate that the rate of panels’ disagreement with these statements ranged from 5 per cent to 29 per cent. Panels indicated agreement with each of these statements with reference to at least 80 per cent of submissions:

- All mandatory subject matter is covered and assessed by exit (90 per cent).
- The assessment instruments reflect the intent of the syllabus (81 per cent).

Seventy-two per cent of panels indicated agreement with the statement: “The assessment instruments allow discrimination between students of differing abilities”, and 78 per cent of panels indicated agreement with the statement: “Sufficient information has been provided to enable decisions to be made about student achievement.”

Most panels generally did not see major problems with the way schools mark and grade student work or apply global/overall standards. Less than 30 per cent of panels indicated disagreement with the statements:

- The grading/marking of student work is appropriate (29 per cent)
- Global/overall standards for each assessment criterion reflect the relevant syllabus standards (16 per cent).

Panels were invited to write comments on significant aspects of the school submission. This section gave panels an opportunity to elaborate on their responses to each of the statements above or to raise other issues. Eleven submissions had no written comments provided by the panel in this section.

Table 3 outlines, in some broad categories, occurrences of written comments on the panel consensus forms and such instances as a percentage of the total number of random sampling submissions. Panels may or may not have commented about some aspects of each submission and therefore the percentages in the rows of this table do not total 100.

Table 3: Submissions with particular classifications of comments

<table>
<thead>
<tr>
<th>The panel commented on the quality of:</th>
<th>Inappropriate</th>
<th>Appropriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>the application of assessment standards</td>
<td>44% (143)</td>
<td>10% (33)</td>
</tr>
<tr>
<td>the assessment tasks</td>
<td>57% (185)</td>
<td>20% (64)</td>
</tr>
<tr>
<td>the submission presentation</td>
<td>18% (59)</td>
<td>21% (70)</td>
</tr>
</tbody>
</table>
However, it is important to note that in 2002:

- when panels commented about standards, their comments usually suggested areas requiring possible further development rather than highlighting areas in which appropriate standards are applied
- of those panels who commented explicitly about the quality of the assessment tasks evident in the submissions, around 57 per cent commented negatively (to some degree) as opposed to about 20 per cent who commented positively
- when panels commented about the presentation of submissions, their comments highlighted appropriate features of the presentation about as often as inappropriate ones.

Panellists’ comments, summarised in table 3, and their responses to the statements, presented in figure 12, must be considered together. The majority of panels generally agreed with the statements about the standards evident in the submission. Panels’ written comments often provided information about the areas for potential improvement by the school when general agreement with statements about the standards had been indicated. For example, about 41 per cent of the panels who commented about inappropriate standards agreed or strongly agreed with the statement that the grading/marking of student work is appropriate.

This further suggests that panels reflect on the content of each submission in terms of the demonstrated student work and the syllabus standards.

**How does random sampling panel advice compare with advice from October verification?**

The random sampling panels produced comments that can be compared with the comments made by panels at October verification.

However, there are fundamental differences between random sampling and October verification that differentiate the qualitative data collected:

- The audience is different: The Form R6 is designed to provide a record of advice about standards, and influence decisions schools make when designing final assessment and placing folios; random sampling provides the Board with information about student placements, although these placements cannot change.
- The process is different: October verification involves panels in a process aimed at ensuring comparability of standards in folio placements (folios submitted by the school as appropriate examples of particular levels of achievement) and commenting on the standards applied by schools; random sampling requires panels to place folios (selected by the Board and possibly atypical of the folios within the group) within levels based on judgments about the application of syllabus standards (without an indication of the school’s exit placement of the same folio to allow verification of judgments about student work).

Comments that panels make on the Form R6 tend to focus on the application of standards in relation to specific folios. Random sampling panels tend to comment more generally about the overall application of standards by the school.

Table 4 presents a comparison of the advice on standards given by district review panels during October verification and the advice of the random sampling panel. This allows a comparison of different panels’ comments about a similar set of folios. The comparisons are made on an overall commonsense reading of the language used in comments and advice about the magnitude of problems with standards applied by the school.
Table 4: Comparison of different panels’ comments on similar folios

<table>
<thead>
<tr>
<th>Problems with standards at random sampling</th>
<th>Problems with standards at Oct. Verification (Form R6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Little</td>
</tr>
<tr>
<td>Little</td>
<td>8%</td>
</tr>
<tr>
<td>Some</td>
<td>26%</td>
</tr>
<tr>
<td>Significant</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>36%</td>
</tr>
</tbody>
</table>

Although the differences in the nature of the comments made must be considered, it is noteworthy that:

- important differences between the comments from pairs of panels are found in only about 4 per cent of cases:
- in 2 per cent of cases district review panels showed little concern about standards in October whereas the random sampling panels showed significant concerns
- in 2 per cent of cases district review panels showed significant concern about standards in October whereas the random sampling panels showed little concern
- 47 per cent of the submissions match in their category of comments
- both panels show little concern about standards in about 8 per cent of submissions
- both panels show some concern about standards in about 34 per cent of submissions.

These data suggest that there is considerable agreement between panels in the sort of overall judgments they make about standards in submissions.

What indications did panels give about overall standards?

Through both the October verification process and the random sampling process, panels give advice to schools and to the Board about the application of standards. It is therefore possible to report the rate of indications of concern about standards expressed by district review panels and/or random sampling panels.

Previous random sampling projects have used two measures to identify a serious difficulty with standards:

- the placement of a folio that differed by two levels of achievement, for example a folio placed by the school at exit as an HA is placed by the random sampling panel as an LA
- the random sampling panel making strongly negative comments about the school’s submission, for example “... assessment items lacked scope to discriminate [between] HA and VHA students”, “... major and minor projects ... fail to allow students to genuinely display analysis and synthesis”, or “... student achievement was inflated due to the design of assessment items”.

In the 2002 random sampling process, the random sampling panels placed 12 folios (from nine submissions) in a level of achievement that differed by more than one level from the exit placement. Review officers examined these school submissions, and confirmed instances of serious difficulty in four of them.

Comments by the random sampling panel are also used as indicators of concerns with a school’s submission. To identify a serious difficulty with standards these...
comments are not read in isolation, but are considered in the context of comments on the corresponding Form R6 and any interactions that review officers have had with the school.

From the 309 submissions, there were 10 instances of confirmed serious difficulties in the way standards had been applied in making exit level of achievement decisions. The schools were notified of these.

Submissions were also categorised as having serious difficulty if the school did not forward adequate material for the random sampling panel to assess folios in terms of the syllabus standards. In these cases, the schools are considered not to have met accountability requirements.

Schools have a responsibility to the Board to supply information relating to the application of the Board’s procedures. Schools that do not supply information as requested are not meeting accountability requirements.

No submissions were reported as having serious difficulties with accountability.

Figure 13 presents the incidence of serious difficulties in standards and accountability found in submissions. This figure shows a very small but relatively steady increase in percentages of difficulties with standards from 1996 to 2001, with a slight decline in 2002. Figure 13 also shows that the percentages of accountability problems have been more constant over the same period.

**Figure 13: Incidence of serious difficulties with submissions 1995–2002**

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**What indications did panels give about tasks completed after verification?**

Each year the random sampling project focuses on a particular topic. In 2002 the topic was tasks completed after verification. One of the ways in which Random Sampling differs from verification is that Random Sampling folios contain additional work, that is, assessment items completed between verification and exit. Although work completed in October and November of Year 12 would be expected to be only a small proportion of a student’s whole achievement in a subject, it does of course constitute part of the student’s actual achievement, and may be used to justify a change in level of achievement from that agreed to by the school and the panel at
verification. Such a change needs to be approved by the panel chair, who may or may not require student work to be submitted to justify it. These assessment tasks, then, are not routinely scrutinised by verification panels. By including this special question in the 2002 Random Sampling project it was intended to obtain information about the quality and effectiveness of some assessment tasks that verification panels would not usually have an opportunity to comment on.

Panellists were asked to answer the following questions about tasks completed after verification.

Question 1: How does the overall quality of the tasks completed after verification compare with the standard of other tasks in the submission? (Available responses: Worse/About the same/Better).

Question 2: Are tasks completed after verification consistent with the assessment outline in the work program? (Available responses: Not at all/Only a little/To some extent/Very).

Question 3: Are tasks completed after verification capable of providing enough evidence to justify a change in the student’s level of achievement between verification and exit? (Available responses: Not at all/Only a little/To some extent/Very).

Panellists were also asked to provide reasons for their responses.

Figure 14 shows the percentage of panels that responded in a particular way to question 1.

**Figure 14: Responses to question 1 (How does the overall quality of the tasks completed after verification compare with the standard of other tasks in the submission?)**

![Graph showing percentage of responses](image)

It can be seen that in about 80 per cent of cases, panels indicated that the quality of post-verification tasks was about the same as or (very rarely) better than that of earlier tasks. Assessment tasks, however, are required not only to be of a suitable quality but also to contribute, in a consistent way, to the school’s assessment program. Figure 15 shows panels’ responses to question 2, about the consistency of post-verification tasks with the school’s assessment outline.
Although in only a quite small minority of cases (about 11 per cent) did panels indicate the post-verification tasks were not (or only a little) consistent with the assessment outline, it should be noted that in almost a half of cases (about 43 per cent) panels indicated that the tasks were something other than very consistent with the assessment outline.

The crucial issue in relation to post-verification tasks is whether they are capable of providing enough evidence to justify a change in a student’s level of achievement. If they are not, and are not used for this purpose, then their usefulness within the school is questionable. If they are not, but are used for this purpose, then the validity of students’ results is questionable. Figure 16 provides information on this question.

The proportion of cases in which panels indicated the post-verification tasks were not capable at all of providing such evidence is about the same as that in which they indicated they were very capable of doing so (15–16 per cent). In about 40 per cent of cases the panel indicated that the tasks were either only a little capable, or not capable at all, of providing this evidence.
Panels’ explanatory comments provide information about this pattern of responses. Some comments referred to the consistent quality of the post-verification tasks, and quite frequently there were no written comments at all. Sometimes it was not possible to identify with any certainty which tasks had been completed after verification. But what panels more often commented on was perceived problems with post-verification tasks. The following comments cover most of the criticisms panels made. Each comment was made about more than a few submissions.

- No assessment took place after verification.
- Results were recorded for assessment after verification, but no student work for these tasks was included in the submission.
- These tasks did not allow assessment of all criteria (generally the higher-level criteria).
- These tasks were generously marked.
- These tasks were easier than earlier tasks.
- Conditions for these tasks differed from those outlined in the work program (for example, a different length requirement).

In a couple of cases, the panel stated that there was too much assessment after verification. In one case the panel stated that post-verification results that were significantly different from earlier results were ignored. Some of the tasks identified as being too easy for the end of Year 12 had some other kind of appropriateness for that stage of a students’ schooling; for example, letters of application and CVs. Comments from some subjects seemed more generally positive or negative than some other subjects, but all subjects had a combination of positive and negative comments.

It would seem from these data that it is not unusual for post-verification assessment tasks to differ in significant ways from tasks completed before verification. The ways in which they differ may include being easier, being more generously marked, and not assessing as many of the criteria. They may be less capable than other assessment tasks of allowing students to demonstrate a sufficient change in overall achievement to justify a change in their level of achievement.

These findings suggest some possible courses of action, including:

- inform standards and assessment officers of the findings, so they can take them into account in their dealings with schools
- inform panel chairs of the findings
- encourage panel chairs to request student work more often before approving changes in levels of achievement after verification.
What conclusions can be drawn from random sampling?

The Board uses the Form R6 at October verification to advise each school about the appropriateness of that school’s assessment practices and standards. Random sampling can provide a check of the advice given via the Form R6 to the school at October verification, and for this reason the form is not included in the submission of random sampling materials.

What do the results of random sampling suggest about quality assurance?

Quality assurance can have two functions:
1. **summative** — providing an after-the-event summary indication of the likely occurrence of satisfactory or unsatisfactory results
2. **formative** — providing results that are used to inform future actions.

Random sampling is intended to provide both quality assurance functions.

How successful are the Board’s moderation procedures?

Through the Board’s moderation procedures schools are advised about standards, not about the exit levels of particular folios. In the Queensland system of moderated school-based assessment, the basic unit is the subject within the school. The Form R6 reflects this in that it captures the school’s proposal about the application of standards in a particular subject and the advice specific to those standards given by the Board’s district review panel before exit in October.

Therefore, it seems reasonable to assess the efficacy of the Board’s procedures in terms of what they are designed to achieve (comparability of standards across schools), rather than in terms of what they are not supposed to do (advise schools about the exit levels of particular folios).

The Board’s procedures are designed to provide schools with advice about standards in subjects. Of the 309 submissions reviewed at random sampling, the 10 that involved serious difficulties with accountability or standards represent a rate of 3.2 per cent. On the basis of such a rate it is reasonable to suppose (given the confidence interval based on sample size) that, across all subject-groups, the Board’s procedures are at least 95 per cent successful in providing schools with suitable advice about standards that would result in appropriate further action by schools.

Advice on standards given at October verification is compared with comments from corresponding random sampling panels. Important differences between the comments of pairs of panels (in different districts, one looking at October verification material, the other at exit material) are found in about 4 per cent of cases.

The analyses in this report show that:
- it seems probable that the Board’s procedures are at least 95 per cent successful in providing schools with suitable advice about standards that results in appropriate action by schools
• it is reasonable to conclude that the true rate of difficulties with exit levels of achievement is probably of the order of 1–5 per cent
• panels give substantially different advice in response to October verification submissions and random sampling submissions in about 4 per cent of cases.

What should be done with the information?

The advice given to schools in October is intended to shape school decision making for the cohort of students from whom the sample is drawn. By contrast, advice from random sampling panels is useful to schools only when it draws attention to matters potentially relevant to their decision making for future cohorts.

Accordingly, the information to schools concentrates on substantive issues raised about a submission rather than on information about each student folio. This information is forwarded to schools in a suitable form, recasting the comments and judgments of the random sampling panel into summary advice about issues of standards and accountability.

The Moderation Section of the Office of the Board is informed about this summary advice for all schools, and in addition is informed when detailed advice to particular schools or district review panels may be beneficial. Random sampling identifies instances of apparently serious difficulties with accountability or standards. The extent and nature of advice required depends on the situation.

How does random sampling meet the Board’s need for quality assurance?

One of the Board’s goals in its strategic plan is to improve the credibility and validity of Board certificates. The formative quality assurance makes a direct contribution to the improvement of validity. Finding where detailed advice seems to be needed may prevent future problems. Identifying areas where efforts directed at improvements may be targeted can help ensure that scarce resources are used most effectively.

On the other hand, the summative quality assurance provided by random sampling — that, for example, the Board’s review procedures are largely successful in providing schools with suitable advice about standards that is then acted upon — conveys to the community a sense of the soundness of Board certificates.

This study shows that panels, by and large, complete the task asked of them. They look at the standards of student work in folios, not merely at the marks assigned by teachers. In many cases where the panel registered a different level of achievement from that of the school at exit, the reason given was one based on a discussion of standards. The fact that the disagreement is based on standards provides support for the view that agreement is also based on standards.

What is the status of random sampling?

An examination of the outcomes of the random sampling project indicates that random sampling makes a contribution to the moderation process that is as substantial as February monitoring and October verification. Informal feedback obtained in 2002 about random sampling suggests that it is accepted as a quality-control mechanism that benefits the operation of school-based assessment.
Appendix 1: The random sampling process

How are data collected during random sampling?

The random sampling process is designed to collect information about the success of the Board’s moderation procedures. There were 3051 exit folios of randomly selected Year 12 student work requested from 339 randomly selected school subject-groups across Queensland in December 2001. Folios selected for random sampling include the work of OP-eligible and OP-ineligible students.

An overview of the information collection process

Random sampling involves the scrutiny of a selection of student exit folios by panels of teachers. Panels provide advice to the Board about the application of standards evident in these exit folios.

Folios are selected to increase the possibility of recording disagreements about standards. The folios included for random sampling are selected:

- by the Board, not by the school
- unevenly from across the different levels of achievement — a greater proportion of folios from higher achieving students in each school subject-group are included in the sample
- from particular subjects — not all subjects are included within random sampling
- from school subject-groups of 15 or more students who complete assessment tasks in the subject in the final semester.

The random sampling panels are not from the same district as the school providing the submission. This helps ensure that the panel viewing folios at random sampling is not made up of members of the same panel that viewed folios from the school subject-group during October verification. Information from panels about the application of standards evident within the school submission is based on knowledge of the standards outlined in the subject syllabus and the student work presented in the folio. It is intended, then, that random sampling panels examine student folios without any prior knowledge of how the school has applied standards in the past.

How many school submissions need to be sampled?

Random sampling requires a sufficient number of school submissions to be reasonably confident that any “serious difficulty” would be observed and that the rate at which it was observed could provide a reliable estimate of the true statewide rate of serious difficulty. The pilot project in 1994 sampled 119 school submissions. In 2002, a sample size of 339 was chosen as being sufficiently large to form the basis of a statewide estimate.
How are school subject-groups selected?

The random selection of 339 school subject-groups occurred within these constraints:

- choose only subjects not undergoing development
- choose only school subject-groups from subjects in general implementation in at least 20 schools with large groups in Semester 4 (this resulted in pool of 31 subjects, from which the actual 20 subjects were selected)
- choose no more than three subject-groups from one school
- include only school subject-groups with at least 15 students enrolled in Semester 4
- select a maximum of 20 school subject-groups statewide for any one subject.10

Figure 17 shows the number of large school subject-groups (for subjects included in the random sampling process) with the number of school subject-groups randomly sampled in each district. This comparison is made using the proportion of all school subject-groups in the State that make up the pool of groups to be sampled in 2002.

The pattern across districts shows that the school subject-groups from which folios were sampled is roughly proportional with the number of large school subject-groups from the sampled subjects.

**Fig. 17: Proportion of all large subject-groups in a district compared with the proportion of all subject-groups randomly sampled in 2002 in a district**

Through this process 199 schools submitted folios in one, two or three subjects.

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10 In 2002, folios were requested from each of the two syllabuses in implementation for Technology Studies (19 for the 1991 syllabus and 16 for the 1999 syllabus).
Because the random sampling process selects the school subject-groups randomly, it is possible that a school will be involved in the process in 1997, 1998, 1999, 2000, 2001 and 2002. A rough calculation suggests that the chances of a school being randomly selected to provide folios in one or more subjects are approximately:

- for selection in 1997: 2 in 3
- for selection in 1998: 2 in 3
- for selection in 1999: 2 in 3
- for selection in 2000: 2 in 3
- for selection in 2001: 2 in 3
- for selection in 2002: 2 in 3

Accordingly, schools should expect to be involved in random sampling year after year, rather than be surprised at being involved.

Table 5 shows the subjects chosen for random sampling in 2002 and the number of school subject-groups involved for each subject.

**Table 5: Subjects and the number of school subject-groups sampled in 2002**

<table>
<thead>
<tr>
<th>Subject code</th>
<th>Subject name</th>
<th>No. of groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>English</td>
<td>20</td>
</tr>
<tr>
<td>20</td>
<td>Ancient History</td>
<td>20</td>
</tr>
<tr>
<td>24</td>
<td>Geography</td>
<td>20</td>
</tr>
<tr>
<td>27</td>
<td>Economics</td>
<td>20</td>
</tr>
<tr>
<td>28</td>
<td>Study of Society</td>
<td>4</td>
</tr>
<tr>
<td>42</td>
<td>Biological Science</td>
<td>20</td>
</tr>
<tr>
<td>44</td>
<td>Multi-Strand Science</td>
<td>20</td>
</tr>
<tr>
<td>45</td>
<td>Marine Studies</td>
<td>10</td>
</tr>
<tr>
<td>62</td>
<td>Business Organisation &amp; Management</td>
<td>6</td>
</tr>
<tr>
<td>63</td>
<td>Business Communication &amp; Technologies</td>
<td>20</td>
</tr>
<tr>
<td>67</td>
<td>Health Education</td>
<td>6</td>
</tr>
<tr>
<td>68</td>
<td>Physical Education</td>
<td>20</td>
</tr>
<tr>
<td>76</td>
<td>Graphics</td>
<td>20</td>
</tr>
<tr>
<td>78</td>
<td>Technology Studies</td>
<td>34</td>
</tr>
<tr>
<td>80</td>
<td>Art</td>
<td>20</td>
</tr>
<tr>
<td>86</td>
<td>Study of Religion</td>
<td>10</td>
</tr>
<tr>
<td>87</td>
<td>Information Processing &amp; Technology</td>
<td>20</td>
</tr>
<tr>
<td>88</td>
<td>Drama</td>
<td>20</td>
</tr>
<tr>
<td>89</td>
<td>Film &amp; Television</td>
<td>14</td>
</tr>
<tr>
<td>91</td>
<td>Music</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>339</strong></td>
</tr>
</tbody>
</table>
How are folios selected?

With the following constraints, the Board randomly selected nine folios from each of the randomly sampled school subject-groups:

- choose, whenever possible, the following numbers of folios:
  - Very High Achievement (VHA) 3
  - High Achievement (HA) 2
  - Sound Achievement (SA) 2
  - Limited Achievement (LA) 1
  - Very Limited Achievement (VLA) 1

- select from the next level of achievement (moving towards the centre) if there are fewer than the required number of folios at any given level of achievement

- select from folios with, in turn, HA, VHA, LA, or VLA if there are fewer than two SA folios.

Figure 18 compares the proportion of folios in each level of achievement for the sampled subjects with the proportion of folios randomly sampled in 2001. This figure shows that the proportion of VHA and HA folios collected for random sampling is higher, and SA and LA lower, than their proportion within the folios of all students who studied the sampled subjects.

**Figure 18:** Proportion of all folios in a level of achievement compared with the proportion of folios randomly sampled in 2001 in a level of achievement

This process of selecting folios from within the sampled school subject-groups helps ensure that a larger proportion of the higher achieving folios are viewed by random sampling panels.
How are folios collected and distributed?

As in previous years, the collection of student folios involved:

- notifying all schools in August 2001 that random sampling would be part of the normal moderation procedures associated with certification in 2001
- reminding schools in October 2001 about the necessity to keep exit folios and review submission materials intact and informing schools of the subjects that had been selected for random sampling
- notifying schools in December 2001 of the folios that had been selected, and requesting materials for the school submission.

For the purpose of the random sampling process, the district in which the school is located is called the home district. Home district panels view the school submission during February monitoring and again during October verification.

During random sampling a school submission is not viewed by a panel in the home district but is sent to a panel in another district. This other district, in which the panel providing advice during random sampling is located, is called the random sampling district.

At the end of 2001 the structure of some Board districts was changed to accommodate the introduction of the Brisbane Central district. This meant that some schools were in one district at the time of verification and in another at the time of random sampling. Additional one-off constraints were introduced into the process of allocating random sampling districts to deal with this situation.

In 2002, each random sampling panel received a maximum of two submissions to review.

How do random sampling panels provide advice?

For the process of random sampling, panellists were asked to:

- examine one or two submissions (each containing nine folios) from schools outside their district
- decide for each folio a level of achievement and the rung position in that achievement band
- respond to a series of statements and comment upon the assessment standards evident within the submission
- reflect on whether the school’s approach to assessment helped students develop thinking skills.

In education research, blind reliability studies usually involve an attempt to determine the reliability of judgments in the context of examinations. The reliability of markers’ judgments is studied when markers have access to a single exam paper, are not given access to other markers’ assessments and comments, and know nothing about the student. Blind reliability studies compare the assessment of “blind” markers — markers in a state of equal ignorance.

The random sampling project cannot be a blind reliability study of teacher judgments because it is not possible to put the outside viewer in the position of having the same knowledge as the original teacher. However, like blind reliability studies, the random sampling project is designed to maximise the potential for disagreement about standards. Aspects of the design intended to maximise
disagreement include the following:

- the stratified sample ensures a predominance of VHA and HA folios
- submissions are sent to different districts so it is likely that the random sampling panel will be unlikely to be familiar with the school or teachers involved
- the subject-group Form R6 is not included in the school submission; the school submission does, however, contain each folio’s Form R4 (or equivalent) showing the profile of subject achievement demonstrated (with the exit level of achievement masked from view), but no other information concerning the placement of the folio by the school.

The random sampling panellists view the materials in a school submission and decide levels of achievement and rungs within levels on the basis of student work in exit folios. These decisions are indicated by the placement of the folio name on the 50-point level-of-achievement ladder provided on the panel consensus form.

The panel consensus form also provides panellists with the opportunity to:

- record some information about whether the school submission is complete
- provide, in a range from strongly disagree to strongly agree, responses to a series of statements
- make written comments on significant positive and/or negative aspects of the submission.

Each year the random sampling process includes a collection of information about a specific aspect of assessment evident within submissions. In 2002, panellists were asked to reflect on the nature and quality of assessment tasks completed after verification.

**What data are collected for random sampling?**

**Quantitative data**

Four main kinds of quantitative data are used for the random sampling project analysis. They are gathered in two ways:

- data collected by the random sampling panels, namely:
  - levels of achievement for 2718 folios
  - rung placements for 2718 folios
- data held by the Board, in particular:
  - exit levels of achievement for 3051 folios
  - estimated school rung placements for 2737 folios (by interpolating from SAI).

Schools were requested to provide information about 3051 student folios for the random sampling process. The random sampling panels received from schools 2996 folios and placed 2718 of these on a rung within a level of achievement. There were no random sampling placements for 20 folios because random sampling panels could not place folios on rungs when schools did not forward sufficient material for the panel to make a judgment about the placement of folios. Four folios were returned to the school because the student had applied for a verification of his or her OP or FPs. In addition, 11 submissions for Technology Studies (1991 syllabus) and 16 submissions for Geography could not be allocated to a panel other than the home district panel, and so were not considered.
Table 6 shows the numbers of school subject-groups and folios involved in random sampling over all years.

**Table 6: General data relating to random sampling folios**

<table>
<thead>
<tr>
<th>Year</th>
<th>Subject-groups sampled</th>
<th>Folios requested</th>
<th>Folios received</th>
<th>Folios placed by panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>119</td>
<td>1200</td>
<td>1190</td>
<td>1189</td>
</tr>
<tr>
<td>1995</td>
<td>427</td>
<td>3843</td>
<td>3824</td>
<td>3797</td>
</tr>
<tr>
<td>1996</td>
<td>399</td>
<td>3591</td>
<td>3558</td>
<td>3503</td>
</tr>
<tr>
<td>1997</td>
<td>380</td>
<td>3420</td>
<td>3396</td>
<td>3337</td>
</tr>
<tr>
<td>1998</td>
<td>373</td>
<td>3357</td>
<td>3339</td>
<td>3248</td>
</tr>
<tr>
<td>1999</td>
<td>346</td>
<td>3114</td>
<td>3079</td>
<td>2993</td>
</tr>
<tr>
<td>2000</td>
<td>376</td>
<td>3384</td>
<td>3362</td>
<td>3338</td>
</tr>
<tr>
<td>2001</td>
<td>370</td>
<td>3330</td>
<td>3302</td>
<td>3291</td>
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<tr>
<td>2002</td>
<td>339</td>
<td>3051</td>
<td>2996</td>
<td>2718</td>
</tr>
</tbody>
</table>

The random sampling panels considered nine folios in each school submission and assigned a level of achievement and a rung position to each folio. The degree of agreement between the placement of folios at exit by the school and the placement of the same folios by the random sampling panel is of interest.

On the Form R6, schools place folios within a level of achievement on rungs from 1 to 10. This is done at October verification and again at exit in November. Students’ folios are not identified by name on the Form R6. Rung positions within levels at exit for OP-eligible students’ folios in the random sample are inferred from Board data. Therefore, it is possible to compare information about exit levels of achievement and inferred rung placement within levels and the placement of folios at random sampling for OP-eligible students.

**Qualitative data**

Two major sources are used to provide the qualitative information used in the random sampling project. These are:

- the comment sheets completed by the random sampling panels; panellists are asked to:
  - respond to a number of statements about the general application of standards evident within the submission
  - make some general comments about the submission
- the Forms R6 held by the Board, which provide:
  - information from the school’s home district, namely, advice offered by district review panels in October 2001 about a different set of folios from the same school
  - information about a range of aspects including the placement of folios, the standards of assessment, marking, the quality of student work and the organisation of the school’s submission.

The random sampling panels make judgments based on the student work present in the folio independently of other judgments such as teachers’ comments and gradings recorded elsewhere in the folio. In analysing the response sheets that panels complete during random sampling it became clear that the panels performed the task of assessing standards actively. Comments about standards indicated careful scrutiny of student work.
Appendix 2: Form R6

### Levels of Achievement

<table>
<thead>
<tr>
<th>School</th>
<th>School Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Subject Code:</td>
</tr>
<tr>
<td>District</td>
<td>Panel Code:</td>
</tr>
</tbody>
</table>

**Queensland Board of Senior Secondary School Studies**

**FORM R6**

**Year 12**

<table>
<thead>
<tr>
<th>Initial School Proposal</th>
<th>Subsequent School Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator's Opinion</td>
<td>__________________________</td>
</tr>
</tbody>
</table>

**Principal to sign and date**

<table>
<thead>
<tr>
<th>Initial School Proposal</th>
<th>Subsequent School Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator's Opinion</td>
<td>__________________________</td>
</tr>
</tbody>
</table>

**Expedite recommended by:**

| Expedite recommended by: | __________________________ |

**For panel use:** Please list the following materials has been adequately presented for reviewing:

- Student files and reports
- Class records
- Class meeting minutes
- Relative achievement of students
- Assessment materials
- Review comments

**Review Panel Comments (complete initial and dates):**

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