



# Administration of the Victorian Certificate of Education





VICTORIA

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Victorian  
Auditor-General

# Administration of the Victorian Certificate of Education

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# VAGO

Victorian Auditor-General's Office  
*Auditing in the Public Interest*

The Hon. Robert Smith MLC  
President  
Legislative Council  
Parliament House  
Melbourne

The Hon. Jenny Lindell MP  
Speaker  
Legislative Assembly  
Parliament House  
Melbourne

Dear Presiding Officers

Under the provisions of section 16AB of the *Audit Act 1994*, I transmit my performance report on the *Administration of the Victorian Certificate of Education*.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Peter Frost', with a long horizontal stroke extending to the right.

DR PETER FROST  
*Acting Auditor-General*

9 June 2010



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# Audit summary

The Victorian Curriculum and Assessment Authority (VCAA) is a statutory body established under the *Education and Training Reform Act 2006* to develop school curriculum and assessments for all primary and secondary students. The VCAA also has primary responsibility for administration of the Victorian Certificate of Education (VCE).

The VCAA spends around \$28.6 million annually on assessment operations including administration of VCE assessment and reporting which comprises a series of in house and contracted tasks. These tasks include the development of assessment instruments, oversight of school based assessments and a wide range of checks and crosschecks on the reliability and validity of students' results. The VCAA award more than 700 000 grades and issue 70 000 statements of results annually.

The objective of the audit was to determine the effectiveness of the procedures that VCAA has in place to achieve its organisational objective of high quality assessment in the VCE.

## Conclusion

The VCAA is effectively administering the VCE providing a high level of assurance that the results students receive are accurate and have been marked consistently and accurately. It has established strong processes and quality controls, and has developed clear and comprehensive guidance to assist schools to administer school based assessments.

There is, however, scope for VCAA to strengthen its security protocols and to introduce a more systematic and data driven process of continuous improvement.

## Findings

The Australasian Curriculum, Assessment and Certification Authorities (ACACA), the national body of the statutory authorities responsible for awarding certificates of senior secondary education, has developed guidelines designed to improve the quality and fairness of assessments. As VCAA is a founding member, the principles of ACACA are comprehensively embedded in its assessment policies and in the guidance it provides to schools.

Developing exams for 130 VCE studies is a complex process involving the input of about 600 exam developers who work collaboratively as part of exam panels to produce exam papers. The VCAA has established sound processes to guide and support exam developers, which could be further enhanced by introducing formal training for all exam developers.

Schools are responsible for designing and administering accurate and fair assessments of student performance against their expected learning outcomes specified in VCAA's study designs. The VCAA provides written guidance and periodic training to schools and audits the quality of school assessed coursework. There is scope for the VCAA to more efficiently conduct audits of school assessed coursework and to improve the feedback it provides to schools on the audit findings.

The VCAA has a large number of committees that comprehensively review the performance of its VCE assessment processes. However, VCAA could make better use of existing quantitative data to inform its review processes as part of a formal program of continuous improvement.

As exam errors, delays and security breaches are significant risks for the VCAA, it has developed clear and detailed security and exam administration processes. Although sound, these processes could be further improved by reviewing exam panel practices and introducing a regular program of real-time audits of printers' premises and exam centres.

The VCAA has also developed an extensive range of quality control and quality assurance processes to mark exam papers accurately and consistently. This includes the use of trial marking, and using control exam papers and statistical data to monitor assessor reliability and performance. The ability of VCAA to monitor and improve assessor performance would be significantly enhanced by expanding its online marking technology to include all VCE studies.

The VCAA has implemented robust technical moderation and study score calculation procedures so that students receive fair and comparable results.

## Recommendations

Number	Recommendation	Page
1.	The Victorian Curriculum and Assessment Authority should: <ul style="list-style-type: none"> <li>improve its systems for managing coursework audits and responding to the findings</li> <li>provide more structured training in assessment development techniques to exam panel members and develop a planned process of self review and evaluation for all exam panels</li> <li>make better use of quantitative data to inform exam review processes as part of a formal program of continuous improvement.</li> </ul>	11
2.	The Victorian Curriculum and Assessment Authority should: <ul style="list-style-type: none"> <li>strengthen its security practices by introducing a program of regular real-time audits of printers' premises and exam centres</li> <li>increase the number of schools subjected to moderation by visitation</li> <li>explore opportunities for the wider application of online marking.</li> </ul>	21



# Audit Act 1994 section 16— submissions and comments

## Introduction

In accordance with section 16(3) of the *Audit Act 1994* a copy of this report, or relevant extracts from the report, was provided to the Victorian Curriculum and Assessment Authority with a request for comments or submissions.

The comments and submissions provided are not subject to audit nor the evidentiary standards required to reach an audit conclusion. Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

## Submissions and comments received

### ***RESPONSE provided by the Chief Executive Officer, Victorian Curriculum and Assessment Authority***

The following is an extract of the response provided by the Chief Executive Officer, Victorian Curriculum and Assessment Authority. The full response is provided in Appendix B of this report.

*The Victorian Curriculum and Assessment Authority (VCAA) welcomes the Auditor-General's report and is delighted to note its positive conclusion that the VCAA has established strong processes and quality controls to effectively administer VCE assessment and reporting.*

*As part of its focus on continuous improvement, the VCAA has been reviewing the guidance provided to schools on the VCE and has increased its use of data to monitor the effectiveness of its processes. The results of this audit will further contribute to VCAA's enhancement of its procedures for assuring high quality assessment in the VCE, and in this context the VCAA accepts all recommendations contained in the report, recognising that implementation of the majority of the recommendations will be contingent upon the availability of additional resourcing by DEECD.*

**RESPONSE provided by the Chief Executive Officer, Victorian Curriculum and Assessment Authority – continued**

Response to specific recommendations:

**1a. VCAA should improve its systems for managing coursework audits and responding to the findings.**

VCAA **accepts** this recommendation. The VCAA will fully review the process of coursework audits and develop a plan of action for improvement to be implemented in 2010.

**1b. VCAA should provide more structured training in assessment development techniques to exam panel members and develop a planned process of self review and evaluation for all exam panels.**

VCAA **accepts** this recommendation which is contingent on the availability of additional funding. The VCAA will develop a proposal for a structured program of training for exam panel members and seek funds to support its implementation.

**1c. VCAA should make better use of quantitative data to inform exam review processes as part of a formal program of continuous improvement.**

VCAA **accepts** this recommendation, noting that it already makes extensive use of data to monitor key processes. The VCAA is developing a framework of quantitative measures and a coordinated schedule for regular reporting of these.

**2a. VCAA should strengthen its security practices by introducing a program of regular real-time audits of printers' premises and exam centres.**

VCAA **accepts** this recommendation, noting that it has conducted regular real-time audits of printers' premises and will continue to do so. The extent to which the VCAA can conduct real-time audits of exam centres is contingent on the availability of additional funding.

**2b. VCAA should increase the number of schools subjected to moderation by visitation.**

VCAA **accepts** this recommendation which is contingent on the availability of additional funding.

**2c. VCAA should explore opportunities for the wider application of online marking.**

VCAA **accepts** this recommendation which is contingent on the availability of additional funding.

# 1 Background

## 1.1 Background

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The Victorian Certificate of Education (VCE) is the most commonly undertaken senior secondary qualification in Victoria which, for most students, is completed in Years 11 and 12.

To complete the VCE, students are required to complete a minimum of four studies including English from a choice of 130. Each study is made up of four units with units one and two usually taken in Year 11 and units three and four in Year 12. Students must demonstrate the required skills and knowledge across each unit to be assessed as having satisfactorily completed the unit.

VCE students are assessed using a combination of school based assessment and external examination. Scores and grades are calculated for each assessment undertaken. The final scores are used to calculate their Equivalent National Tertiary Entrance Rank which is used as a basis for entry to university and TAFE courses.<sup>1</sup> In 2009, 48 654 students out of a possible 50 178 students (97 per cent) satisfactorily completed the VCE.

## 1.2 Administration of the VCE

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Primary responsibility for the administration of the VCE rests with the Victorian Curriculum and Assessment Authority (VCAA), a statutory body established under the *Education and Training Reform Act 2006*. Its main responsibilities include:

- determining policies, criteria and standards for curriculum and assessments for school students
- developing, evaluating and approving curriculum for courses normally undertaken in senior secondary years of schooling, and the assessment procedures for those courses
- overseeing the delivery and conduct of assessments for the VCE including arrangements with schools to conduct school based assessment on its behalf
- approving the establishment of examination centres
- conducting external assessment of students undertaking the VCE
- verifying student results and issuing VCE certificates.

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<sup>1</sup> In 2010 Victoria will be changing the name of the ENTER to the Australian Tertiary Admissions Rank (ATAR), the nationally agreed name for their tertiary entrance ranks.

At June 2009 VCAA had a core equivalent full-time (EFT) staff of 194, who were supported by around 4 000 casual and sessional employees. Figure 1A outlines the key administrative VCE processes undertaken by VCAA.

**Figure 1A**  
**Key VCE processes**

<b>Establish and review VCE curriculum</b>	Develop, approve, communicate and review the study design for each VCE study. The study design sets the curriculum outcomes to be achieved by students.
<b>Develop print and deliver exam material</b>	Permanent and sessional staff develop student exams. Exam printing is contracted out and couriers deliver the examination materials to exam centres.
<b>Oversee the operation of exam centres</b>	Approve and audit examination centres. School principals are responsible for the conduct and security of written examination centres at their school.
<b>Oversee school based assessments</b>	Guide schools on developing coursework assessments for students and moderate the results to make sure they are consistent and equitable for all students.
<b>Mark completed exams</b>	Sessional staff mark written, oral and performance examinations.
<b>Prepare and certify student results</b>	Apply statistical processes to ensure comparability of results. The awarding of the VCE reflects successful course completion.

Source: Victorian Auditor-General's Office.

Schools are also involved in administering the VCE. They are responsible for enrolling students in their VCE studies, determining whether students have successfully completed each unit of study and accurately assessing and recording the performance of their students. Where authorised, schools also act as exam centres and are responsible for receiving and storing exam papers, administering exams to students and returning completed exam papers to the VCAA.



## 1.3 Audit objectives and scope

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The objective of the audit was to determine the effectiveness of the procedures that the VCAA has in place to achieve its organisational objectives of high quality assessment in the VCE.

To address this objective the audit assessed whether the:

- VCE assessment procedures meet the Australasian Curriculum, Assessment and Certification Authorities' (ACACA) *Guidelines for Assessment Quality and Equity*
- VCAA exercises high level quality control and quality assurance over the conduct of VCE assessments
- VCAA exercises high level quality checks on the accuracy of VCE assessment results.

This audit examined the VCAA's administration of the VCE assessment system including its management of the arrangements for both examinations and school based assessments. It included consideration of the General Achievement Test and its use in the moderation of school based assessments, arrangements for the administration and processing of VCE examinations and recording of VCE results.

## 1.4 Audit approach

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The audit was conducted in accordance with Australian Auditing and Assurance Standards applicable to performance audits. Evidence was gathered using the approach applied by the Australian Universities Quality Agency for auditing universities and other education institutions.

This approach involved two key stages:

- self-assessment—VCAA assessed how effective its procedures were in achieving its organisational objectives of a high quality assessment in the VCE using criteria we established. The assessment results, together with supporting documentation, were presented to us in the form of a Performance Portfolio report for our examination. VCAA's Performance Portfolio included details of its approach, deployment, results and improvement activities in administering its VCE functions
- verification/validation—a site visit was also conducted to interview key staff and gather any further evidence needed to validate the self-assessment findings.

The total cost of the audit was \$260 000.

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# 2 Developing assessments and improving assessment practices

## At a glance

### Background

The Victorian Certificate of Education (VCE) assessments comprise:

- exams administered by the Victorian Curriculum and Assessment Authority (VCAA) in line with the Australasian Curriculum, Assessment and Certification Authorities (ACACA) *Guidelines for Assessment Quality and Equity*
- school based assessments conducted on behalf of, and overseen by, VCAA.

### Findings

- The principles of ACACA are embedded in VCAA's study design and assessment handbooks enabling schools to adopt a flexible and varied approach to engaging students with the curriculum.
- Draft exams are independently vetted by up to six people, each looking at specific elements of the exam.
- VCAA can improve the efficiency of its school assessed coursework audits.
- Although VCAA's exam review processes are generally sound, better use could be made of existing quantitative data.

### Recommendation

The Victorian Curriculum and Assessment Authority should:

- improve its systems for managing coursework audits and responding to the findings
- provide more structured training in assessment development techniques to exam panel members and develop a planned process of self review and evaluation for all exam panels
- make better use of quantitative data to inform exam review processes as part of a formal program of continuous improvement.

## 2.1 Introduction

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The Australasian Curriculum, Assessment and Certification Authorities (ACACA) is the national body of the statutory authorities responsible for awarding certificates of senior secondary education in the states and territories of Australia and in New Zealand. Participating ACACA agencies, including the Victorian Curriculum and Assessment Authority (VCAA), have adopted guidelines developed by ACACA aimed at improving the quality and fairness of assessments. The ACACA *Guidelines for Assessment Quality and Equity* are outlined in Appendix A.

We examined whether VCAA's processes for developing Victorian Certificate of Education (VCE) assessments, and reviewing and improving assessment processes, met the ACACA guidelines for quality and equity in:

- the design of assessments
- arrangements for improving assessment practices.

## 2.2 Design of assessments

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There are two forms of VCE assessments: school based assessments and external exams. School based assessments allow teachers to design assessment activities that are consistent with their teaching practice and allow students to demonstrate their learning outcomes in a variety of ways. External exams are a more traditional form of assessment where student knowledge and understanding is assessed by answering set questions under conditions that are, as far as is practicable, the same for every student.

### 2.2.1 Conclusion

The ACACA guidelines are reflected in the VCAA's assessment policies and guidelines, and are embedded within key assessment development documents including study designs and assessment handbooks. These and similar documents guide the development of assessment material and give a strong and consistent message about the importance of developing high quality, equitable assessments.

The VCAA supports schools to assess students in line with the ACACA guidelines. Study designs and study assessment handbooks provide schools with guidance on developing assessment material, the skills and knowledge they must assess against and under what conditions. There is scope for the VCAA to conduct audits of school assessed coursework more efficiently and to improve the feedback it provides to schools on their performance.

## 2.2.2 Development of exams

Exams are an essential component of the VCE assessment program, and a major means of achieving comparability and fairness in the assessment of student learning.

For the VCAA, exam preparation begins up to two years prior to the results being released and involves developing both study designs and exam papers. Figure 2A illustrates how the VCAA has complied with the ACACA guidelines in relation to the development of study designs and exam papers.

**Figure 2A**  
**Exam development practices**

<b>Study designs</b>	<b>VCAA practice</b>
Study designs are developed by the VCAA and set out the required student learning outcomes for each VCE study. They are the basis on which exam material is developed.	<p>Study designs:</p> <ul style="list-style-type: none"> <li>adequately assist schools to adopt a flexible and varied approach to engaging students with the curriculum</li> <li>are subject to review at least once every five years. The review process includes stakeholder consultation with industry and tertiary representatives.</li> </ul>
<b>Exam setting panels</b>	<b>VCAA practice</b>
Each year the VCAA employs more than 600 sessional staff to participate in exam setting panels. Panel members develop exam questions and assemble them into complete exam papers.	<p>Exam setting panels:</p> <ul style="list-style-type: none"> <li>consist of qualified sessional staff supported, guided and trained by experienced panel chairs and exam project managers</li> <li>prepare exam papers based on the learning outcomes specified in study designs and are supported by high quality guidelines and statistical data on past exams</li> </ul>
<b>Vetting processes</b>	<b>VCAA practice</b>
The VCAA has established an independent vetting process whereby draft exam papers are reviewed to make sure they are theoretically and technically accurate, contain valid questions, conform to the study design and have clear instructions.	<p>Vetting processes:</p> <ul style="list-style-type: none"> <li>provide multiple opportunities for the VCAA to identify problems from up to eight different perspectives</li> <li>have been reviewed and improved over a number of years with a result that no technical errors were identified in printed exam papers in 2009.</li> </ul>

Source: Victorian Auditor-General's Office.

### Opportunities for improvement

Although the VCAA provides training in exam development practices to panel chairs, limited formal training is provided to other panel members. Instead, panel chairs work with panel members to impart their skills and knowledge using their professional judgement. Increasing the level of formal training provided to panel members, particularly new members, would provide better assurance that members are properly skilled and adopt a consistent approach.

There was evidence that some exam panels reflect on their effectiveness during the post exam period. However, the initiation of such reviews largely depended on the panel chairs' initiative rather than being part of a planned process of continuous improvement.

### 2.2.3 School based assessments

School based assessments may account for up to 70 per cent of a student's final VCE score. Students are assessed by their schools against the learning outcomes they are expected to achieve in the final year of each VCE study. There are two forms of school based assessment:

- school assessed coursework—occurs in all studies except Studio Arts and is an assessment of each student's level of achievement against a range of tasks selected by schools from the study design
- school assessed tasks—occur in seven studies, such as Art and Media, and allow students to demonstrate their skill and knowledge through the creation of products and models.

Figure 2B illustrates how VCAA has complied with the ACACA guidelines in relation to the development of school based assessments.

**Figure 2B**  
**School based assessment practices**

Supporting information	VCAA practices
The VCAA provides schools with a broad range of sample tasks, assessment criteria and guidance to assist them to set appropriate coursework tasks for students.	Supporting materials provided to schools: <ul style="list-style-type: none"> <li>• adequately reflect the requirements of the ACACA guidelines</li> <li>• comprehensively describe the process for developing and conducting both coursework and task assessments.</li> </ul>
Coursework audits	VCAA practices
The VCAA conducts desktop audits of schools' coursework assessments.	The VCAA's coursework audits: <ul style="list-style-type: none"> <li>• assess the quality of the coursework set by schools for units three and four of selected VCE studies</li> <li>• are selected based on clearly defined risk-based criteria</li> <li>• provide schools with feedback on the quality and appropriateness of coursework tasks set by teachers</li> <li>• identified 142 opportunities for improvement in coursework design from a sample of 961 audits conducted in 2009.</li> </ul>
Moderation processes	VCAA practices
The VCAA applies moderation processes to student results.	All school based assessments are moderated to make sure that students are not unfairly disadvantaged by uneven assessment practices between schools (Refer to Chapter 3 for more information about moderation practices).

Source: Victorian Auditor-General's Office.

## Opportunities for improvement

Where opportunities for improvement are identified from school assessed coursework audits, schools are notified and requested to contact the relevant VCAA curriculum manager to discuss the audit results. However, the VCAA does not proactively follow-up that the notified schools actually contact the relevant curriculum manager.

Although the VCAA provides feedback to schools on unit three audit results, these are provided after schools have started the unit four coursework assessments. Starting this process earlier would better place schools to implement the suggested improvements in a more timely manner.

Responsibility for maintaining VCAA's system for recording and managing school coursework audits primarily rests with one staff member. Reports generated from these systems were incomplete and inconsistent. These problems could be reduced by strengthening the operational controls for this system, and enabling state reviewers and curriculum managers to be involved in maintaining the system. This would also ease the administrative burden on the staff member who operates the system.

## 2.3 Improving assessment practices

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The ACACA guidelines state that assessment agencies should endeavour to improve the assessment practices they are responsible for by:

- regularly reviewing the methods, materials and results of assessments
- examining whether quality control and quality assurance processes are equitable
- training item writers, test designers and markers
- communicating its quality requirements to suppliers of assessment items and instruments
- promoting the adoption of ACACA guidelines to teachers responsible for school based assessments.

### 2.3.1 Conclusion

VCAA's assessment review and improvement practices are generally sound. These practices could be improved by making better use of existing quantitative data to evaluate and improve operational performance, and to better identify and target training opportunities for relevant staff.

### 2.3.2 Review and improvement processes

The VCE and its assessment program are subject to ongoing review during the assessment process. The VCAA also performs long-term strategic performance reviews which include benchmarking against comparable Australian and international assessment authorities.

Figure 2C illustrates how VCAA has complied with the ACACA guidelines in relation to improving assessment practices.

**Figure 2C**  
**Improving assessment practices**

<b>Regular review</b>	<b>VCAA practices</b>
The VCAA conducts regular reviews of the methods, materials and results of assessments.	<p>The VCAA has established a number of review committees that collectively cover a broad range of operational and strategic issues. These include:</p> <ul style="list-style-type: none"> <li>• Review and Appeals Committee—reviews and considers exam breaches</li> <li>• VCE Review Panels—review study designs</li> <li>• VCE Project Review—annually review issues and opportunities identified during the previous year’s exam and results processing period.</li> </ul> <p>VCAA has also conducted major reviews of the effectiveness of key processes such as study scores and statistical moderation.</p>
<b>Quality control and assurance</b>	<b>VCAA practices</b>
The VCAA examines equity in quality control and quality assurance processes such as research and data analysis.	<p>The VCAA has established sound quality control and assurance procedures including:</p> <ul style="list-style-type: none"> <li>• reviewing study designs</li> <li>• multiple vetting of exam papers</li> <li>• moderating school based assessment results</li> <li>• using control exam papers to monitor assessor performance</li> <li>• producing exam reports and teacher feedback surveys</li> <li>• performing data entry quality checks and verification.</li> </ul>
<b>Training</b>	<b>VCAA practices</b>
The VCAA trains the item writers, test designers and markers it employs.	<p>VCAA provides exam panel chairs with technical training in item writing and test design, and expects them to relay this training to panel members.</p> <p>VCAA uses sample and trial exam papers drawn from the student population to train and assess markers’ capabilities before marking commences.</p>
<b>Communication</b>	<b>VCAA practices</b>
The VCAA communicates its quality requirements to suppliers of assessment items and instruments.	<p>VCAA communicates its quality requirements to schools developing school based assessments via study guides and assessment handbooks.</p> <p>VCAA clearly specifies its quality requirements for the development of the General Achievement Test within its contract with the supplier.</p>
<b>Promotion of ACACA guidelines</b>	<b>VCAA practices</b>
The VCAA promotes the adoption of ACACA guidelines to teachers responsible for school based assessments.	VCAA promotes the adoption of the ACACA guidelines to teachers through study designs, assessment handbooks and regular notices and bulletins.

Source: Victorian Auditor-General’s Office.



## Opportunities for improvement

The VCAA has conducted reviews of some key processes, but not as part of a planned program of review and continuous improvement, and they do not cover all key processes. For example, the current review of statistical moderation is the first review of this major process since it was introduced in 2000 while the derived exam score has not been reviewed since it was introduced in 2003. Further, the VCAA uses a benchmarking type approach to assist it to design assessments, but does not benchmark the performance of key operational processes such as enrolment errors, marker performance or the timeliness of producing VCE results.

The VCAA trains and continually assesses the performance of its exam markers but does not apply the same rigorous training and assessment practices to exam panel members. Instead, the VCAA relies heavily on the ability of exam panel chairs to make sure that panel members are equipped to perform their roles. Extending structured training to panel members would provide more certainty that panel members are properly skilled and reduce the burden on panel chairs to perform this task.

Sessional staff, including exam panel members and exam markers, are not always given the opportunity to provide VCAA with formal feedback on the quality and quantity of the training and support they receive. Introducing regular feedback and review opportunities for sessional staff would better inform VCAA of how to improve the quality of assessment practices. It would also help VCAA to instil a culture of information sharing and continuous improvement.

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## Recommendation

1. The Victorian Curriculum and Assessment Authority should:
    - improve its systems for managing coursework audits and responding to the findings
    - provide more structured training in assessment development techniques to exam panel members and develop a planned process of self review and evaluation for all exam panels
    - make better use of quantitative data to inform exam review processes as part of a formal program of continuous improvement.
-



# 3 Conducting and marking assessments

## At a glance

### Background

Almost one million Victorian Certificate of Education (VCE) assessments are conducted and marked each year across almost 1 000 exam centres approved by the Victorian Curriculum and Assessment Authority (VCAA). The results of these assessments contribute to the selection of students for entry into higher education courses.

### Findings

- VCE exam administration and security are well managed through regular audits and review.
- The VCAA exercise extensive quality control and quality assurance processes over the assessment marking process.
- The VCAA use trial marking, control scripts and statistical data to monitor assessor reliability and performance.
- Online marking, currently used to mark the results of the General Achievement Test is a developing technology that presents an opportunity for VCAA to improve the efficiency of exam marking.
- The VCAA uses sound and proven methodologies to make sure school based assessment results are consistent and reliable across the state.
- VCAA applies strict quality controls and technical procedures to make sure that student's results are accurate and valid.

### Recommendation

The Victorian Curriculum and Assessment Authority should:

- strengthen its security practices by introducing a program of regular real-time audits of printers' premises and exam centres
- increase the number of schools subjected to moderation by visitation
- explore opportunities for the wider application of online marking.

## 3.1 Introduction

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We examined whether the Victorian Curriculum and Assessment Authority (VCAA) exercises high level quality control and quality assurance over the conduct of Victorian Certificate of Education (VCE) assessments and the accuracy of assessment results by:

- adequately managing exam administration and security to ensure a quality assessment experience for all students
- using trained assessors and monitoring them for reliability
- using adequate moderation procedures to achieve comparability of standards and sound assessment practices across schools
- having sound arrangements in place to verify assessments and results
- implementing rigorous and defensible technical procedures to calculate student results.

## 3.2 Conduct of VCE exams

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The VCAA administers the conduct and marking of VCE exams using its own core staff and drawing on around 4 000 casual and part-time staff ranging from senior professional educators to process workers.

Across the state a large number of school buildings and other venues are temporarily converted to statewide exam centres requiring the VCAA to establish secure arrangements to distribute and collect exam material. This is achieved through contractual arrangements with printing and courier companies, and through partnership arrangements with both government and non-government schools.

### 3.2.1 Conclusion

VCE exam administration and security are well managed by the VCAA. By minimising errors, delays and security breaches, the VCAA provides a quality assessment experience for VCE students. It could further improve its approach by reviewing exam panel practices and introducing a program of regular real-time audits of printers and exam centres. It should also continue to actively review any potential exam security risks posed by new and emerging technologies.

### 3.2.2 Exam administration processes

Figure 3A illustrates how the VCAA manages exam administration and security so that all students receive a quality assessment experience.

**Figure 3A**  
**Exam administration practices**

Exam administration	VCAA practice
<p>Exam administration includes printing, packaging, transporting and storing exam papers as well as administering the exam to students and sorting completed papers for marking.</p>	<p>Exam materials are efficiently and securely packaged and delivered to schools.</p> <p>The VCAA does not operate exam centres. Instead it uses formal agreements to manage the administration, security, conduct and establishment of exam centres. In 2009 VCAA approved 985 exam centres.</p> <p>Exam conditions are clearly communicated to schools and students by the VCAA through bulletins, notices and the VCE Exams Navigator booklet.</p> <p>The VCAA has established a communication system—Exam Messages—to promptly advise exam centres during each exam that no issues have been identified with the exam paper.</p>
Security	VCAA practice
<p>The VCAA's security practices.</p>	<p>The VCAA has adopted sound security practices that include:</p> <ul style="list-style-type: none"> <li>• developing detailed security protocols to govern the storage and distribution of draft exam material and auditing compliance with those procedures</li> <li>• incorporating comprehensive security requirements in printing and courier contracts</li> <li>• conducting major reviews of security practices in 2004 and 2008</li> <li>• reviewing security practices in regular fortnightly meetings and daily meetings during the exam period.</li> </ul> <p>The VCAA has not identified any major security breaches during the last five years. Breaches of exam rules by students are rare. Against a total of more than 85 000 students who sat VCE exams in 2009, only 87 incidents were identified and investigated by the VCAA, resulting in only nine proven cases of cheating.</p>

Source: Victorian Auditor-General's Office.

### Opportunities for improvement

The VCAA subjects exam panel members to a range of security checks, but has recognised that allowing panel members to work off-site is a security risk. For this reason, it is currently exploring ways to further tighten exam panel security procedures by:

- trialling the use of secure internet sites where panel members can develop and store draft exam material. The VCAA expects this will also help to streamline communication between panel members.
- examining the feasibility of providing panel members with secure USB's.

Under the VCAA's contractual arrangements with printers, new printing firms are audited to determine whether the required security measures are in place at their premises. The VCAA's staff also work directly with new printers to make sure its mandatory security requirements are understood. However, it does not regularly audit printer premises during the production of VCE exams. Introducing a program of regular real-time audits would provide the VCAA with better assurance that printing contractors are complying with its mandatory security requirements.

Although exam centres are periodically audited by the VCAA, the timing of the audit is pre-arranged with the school. This has the potential to reduce the effectiveness of the audit.

As the VCAA has identified that exam breaches involving the unauthorised use of electronic devices increased from 35 per cent in 2008 to 40 per cent in 2009, it is developing procedures to address this risk. The VCAA should continue to actively review and update its exam rules in light of any potential risks posed by new and emerging technologies.

The process for receiving and processing completed exam papers from schools relies heavily on the knowledge of a few key staff and is not formally documented. As such, receiving and processing of completed exam papers could potentially be disrupted if this staff knowledge was lost. Developing a detailed process map for the receipt and processing of completed exam papers would provide continuity in the event of staff absence and would also present an opportunity to review the efficiency of this process.

### 3.3 Marking VCE exams

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In 2009 almost one million VCE assessments were marked. These include:

- **school based assessments**—marked by subject teachers at schools
- **multiple choice exams**—scanned, scored and processed electronically
- **written exams**—marked by assessors off-site (English, Languages Other Than English and two other exams are marked centrally at the VCAA's premises)
- **oral and performance exams**—marked by a panel of markers who observe the student's response live at an exam centre
- **General Achievement Test (GAT)**—scanned and marked online by assessors who access completed student exam papers via a secure internet site.

#### 3.3.1 Conclusion

The VCAA exercises extensive quality control and quality assurance over exam marking. Exam marking is undertaken by trained assessors under the guidance and scrutiny of experienced chief assessors. The VCAA use trial marking, control exam papers and statistical data to monitor assessor reliability and performance.

The GAT exam is currently marked online with Chemistry and Physics exams to follow this year. Online marking has the potential to significantly improve the efficiency of, and control over, the marking process. It also has the potential to increase the number of available markers from regional areas by removing the need for them to travel to VCAA's premises to collect and return student exam papers.

### 3.3.2 Exam marking processes

The exam marking process involves recruiting, training and monitoring more than 4 000 sessional assessors. Exams are marked within a designated period. Figure 3B illustrates how the VCAA has made sure that exam assessments are only undertaken by trained assessors whose judgements are monitored for reliability.

**Figure 3B**  
**Exam marking practices**

Assessor selection and training	VCAA practice
Assessors are sessional staff and are required to have taught the study at units 3 and 4.	<p>Exam Project Managers and Chief Assessors are responsible for selecting suitable exam assessors.</p> <p>Being an assessor is recognised by the Victorian Institute of Teaching as an approved professional development activity.</p> <p>Experienced and highly qualified chief assessors oversee the marking of exams, determine final results in specific cases, help monitor marking performance and assist markers to apply criteria in a consistent way.</p> <p>Assessors are required to be fully conversant with the study design, are trained by the VCAA and are provided with an assessor manual to guide them through the marking process.</p>
Online marking	VCAA practice
The VCAA introduced online marking for the GAT in 2008 and will introduce online marking for Chemistry and Physics in 2010.	<p>The VCAA outsources the scanning and uploading of completed exam papers to specialist IT contractors who make them available to markers via a secure website. The IT contractor for GAT has comprehensive quality controls that are audited by the VCAA.</p> <p>Online marking reduces the risk of exam papers being lost and allows:</p> <ul style="list-style-type: none"> <li>• off-site marking without the need for repeated meetings or the physical return of marked exam papers</li> <li>• rapid reallocation of exam papers without the need for physical movement of materials</li> <li>• all exam papers can be used to establish benchmarks for monitoring marker performance</li> <li>• real-time monitoring of assessor performance</li> <li>• the VCAA to easily broadcast messages to all markers.</li> </ul>

**Figure 3B**  
**Exam marking practices – continued**

Exam marking	VCAA practice
Exam marking is conducted by trained assessors in line with the VCAA's policies and procedures.	The VCAA: <ul style="list-style-type: none"> <li>• has embedded high standard quality control and quality assurance processes into the exam marking process</li> <li>• has a comprehensive five stage marking process to make sure all exams are marked consistently and fairly</li> <li>• requires every exam paper to be marked by a minimum of two markers</li> <li>• uses control exam papers to monitor assessor performance and provide chief assessors with feedback on assessor performance.</li> </ul>

Source: Victorian Auditor-General's Office.

### Opportunities for improvement

Central marking on the VCAA's premises provides greater control over the marking process than when markers work off-site (at home) and allows the VCAA to monitor assessor performance in real time. As central marking is very resource intensive only English, Language Other than English and two other exams are marked centrally.

Online marking has the potential to:

- provide the VCAA with more extensive control than central marking
- facilitate the efficient movement of exam papers
- encourage potential assessors in regional Victoria to increase their professional development by participating in the marking of exams.

To monitor assessor performance for exams that are not marked online, the VCAA requires assessors to mark photocopied control exam papers at specified intervals. The use of online marking technology would improve this process as assessors would not be aware whether or not the paper they are marking is a control paper.

## 3.4 Moderation of school based assessments

While schools are responsible for assessing student performance via a range of school based assessments, the VCAA overlays up to three moderation processes against the school assessed scores to verify that they are comparable and fair to the students.

These processes are:

- **internal moderation**—eliminates differences within a school caused by different teaching practices
- **statistical moderation**—makes sure that coursework scores between schools are comparable across the state
- **moderation by visitation**—verifies the scores of school assessed tasks.



### 3.4.1 Conclusion

The VCAA has implemented a robust model of moderation to make sure that school based assessments are comparable. The approach is based on a sound and proven methodology and has been applied consistently and effectively since 2000. However, scope exists to improve the quality of internal moderation and to increase the number of visitations conducted.

### 3.4.2 Moderation processes

Figure 3C illustrates how the VCAA's moderation procedures achieve comparability of standards and sound assessment practices across schools.

**Figure 3C**  
**Moderation practices**

Internal moderation	VCAA practice
Student scores are marked and then remarked by a second teacher from the same or a nearby school to make sure the scores are equitable.	The VCAA provides guidance and assistance to schools to establish internal moderation processes. Where schools or study cohorts are too small for internal moderation within one school, VCAA assists schools to form formal partnerships with other schools to moderate their results.
Statistical moderation	VCAA practice
Student scores are adjusted to match the level and spread of external exam results.	The VCAA's statistical moderation approach is applied to school assessed coursework and is based on a sound and proven methodology. It is currently evaluating its statistical moderation processes to confirm that they remain sound and to identify any opportunities for improvement.
Moderation by visitation	VCAA practice
Moderation by visitation requires two reviewers to independently assess each students work in selected schools.	The VCAA's process applied to school assessed tasks: <ul style="list-style-type: none"> <li>examines eight to ten per cent of school assessed tasks each year</li> <li>uses a risk-based approach to select schools for visitation</li> <li>employs a robust visitation process that requires two reviewers to visit the school to independently assess the tasks and either adjust or confirm the school results.</li> </ul>

Source: Victorian Auditor-General's Office.

### Opportunities for improvement

The VCAA has identified that the extent and quality of internal moderation varies between schools. To address this it is currently developing an annual induction process for newly appointed VCE coordinators aimed at improving their understanding of the management and conduct of internal moderation procedures.

While the moderation by visitation process is sound, the number of schools VCAA examines is low and the coverage of school types is narrow. By comparison, the VCAA's statistical moderation process is applied across all school assessed coursework. The VCAA is currently investigating ways to increase its coverage of schools by increasing the number of visits conducted or by sampling evidence in electronic form.

## 3.5 Calculating student results

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The calculation of final VCE results has a significant impact on a student's future as higher education institutions select students based on their school results.

### 3.5.1 Conclusion

The VCAA provides clear and comprehensive guidance to schools and students and applies strict quality controls and technical procedures over student assessment data to make sure that students receive correct and valid results.

### 3.5.2 Arrangements for verifying assessments and results

The VCAA has established data entry controls to prevent schools from entering incomplete student enrolment data. Schools are also required to confirm student enrolment data with students and class teachers. In 2009, 721 students were enrolled in the wrong study which caused a number of problems during the exam period. However, VCAA's contingency measures enabled them to deal with the issue in a timely manner that minimised the inconvenience to the students concerned.

The *VCE and VCAL Administrative Handbook*, and the *VCE Exam Navigator* booklet contain detailed instructions to schools and students to make sure exams are conducted appropriately and that all work submitted for school based assessment is the original work of the student.

The VCAA has imposed strict controls over the identification of student exam papers that make sure that those received from schools are complete and correctly identified. Where incorrect or incomplete papers are identified, the exam papers from that school are placed on hold until the issue has been resolved.

### 3.5.3 Technical procedures for calculating student results

To calculate student results, VCAA implements a range of technical procedures that were developed around a sound evidence base. These include:

- **GAT**—recognised as a good predictor of school and student performance, and is used primarily as part of the VCAA's moderation processes for school based assessments

- **anomalous exam grade check**—compares the students' expected grade with the grade awarded. If the grade is below the allowed tolerance, the exam paper is remarked
- **Derived Exam Score (DES)**—students can apply for a DES if their exam performance or their preparation for it was affected by unforeseen circumstances. DES is calculated on the basis of all relevant available information about the student's performance in the study and their GAT performance
- **data validation and validity checks**—applied to the VCAA's electronic data storage and processing systems to make sure that the primary technical procedures return valid results.

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## Recommendation

2. The Victorian Curriculum and Assessment Authority should:
    - strengthen its security practices by introducing a program of regular real-time audits of printers' premises and exam centres
    - increase the number of schools subjected to moderation by visitation
    - explore opportunities for the wider application of online marking.
-



# Appendix A.

## ACACA guidelines

### *Guidelines for Assessment Quality and Equity*

The Australasian Curriculum, Assessment and Certification Authorities (ACACA) is responsible for certificates of senior secondary education. The ACACA guidelines, released more than 10 years ago, were designed to be a step forward in improving the quality, and hence the fairness, of assessment. The Victorian Curriculum and Assessment Authority is a member of ACACA.

**Figure A1**

#### **Summary of the ACACA Guidelines for Assessment Quality and Equity**

##### **Assessment item requirements**

Assessment items are individual questions or tasks that when combined form the assessment. For example, questions in an exam paper. The ACACA guidelines state that assessment items should:

- assess what the item writer intends it to assess
- assess what on face value it purports to assess
- not include unnecessary jargon or subtext
- not include gender and cultural stereotypes unless considered necessary
- be clearly presented, state its requirements explicitly and only include known knowledge as background material
- have clear, explicit, unambiguous criteria that allows students to identify the appropriate ways to demonstrate the required knowledge and skills
- allow markers to recognise the different ways student's may demonstrate command of the required knowledge and skills.

**Figure A1**  
**Summary of the ACACA Guidelines for Assessment Quality and Equity –**  
**continued**

<b>Assessment instrument requirements</b>
<p>Assessment instruments are groups of assessment items that form a complete assessment. For example, an assignment, practical task, an oral task, performance or written exam. The ACACA guidelines state that assessment instruments should:</p> <ul style="list-style-type: none"> <li>• give students clear and definite instructions</li> <li>• be used under clear, definite and specified conditions that are substantially the same for all</li> <li>• be used under conditions that do not present an inappropriate barrier to the equal participation of all.</li> </ul>
<b>Requirements for sets of assessment instruments</b>
<p>To certify achievement in a subject requires assessment of students' command of the knowledge and skills defined and required by the syllabus. This assessment occurs through a set of assessment instruments. The ACACA guidelines state that sets of assessment instruments should:</p> <ul style="list-style-type: none"> <li>• involve the use of a range and balance of background contexts in which assessment items are presented</li> <li>• involve a range and balance of types of assessment instruments, and modes of response, including a balance and range of visual and linguistic material</li> <li>• involve a range and balance of conditions.</li> </ul>
<b>Improvement of assessment practices</b>
<p>The ACACA guidelines state that each agency should endeavour to improve assessment practices for which it bears responsibility by:</p> <ul style="list-style-type: none"> <li>• regular review of the methods, materials and results of assessment</li> <li>• including an examination of equity in quality control and quality assurance procedures such as research and data analysis</li> <li>• training item writers, test designers and markers directly employed by the agency</li> <li>• communicating its quality requirements to suppliers of assessment items and instruments</li> <li>• promoting the adoption of these guidelines by teachers responsible for school based assessment contributing to results certified by the agency.</li> </ul>

*Source: Victorian Auditor-General's Office, based on the ACACA Guidelines for Assessment Quality and Equity.*

## Appendix B.

# *Audit Act 1994* section 16— submissions and comments

### Introduction

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In accordance with section 16(3) of the *Audit Act 1994* a copy of this report, or relevant extracts from the report, was provided to the Victorian Curriculum and Assessment Authority with a request for comments or submissions.

The comments and submissions provided are not subject to audit nor the evidentiary standards required to reach an audit conclusion. Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

## Submissions and comments received

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### **RESPONSE provided by the Chief Executive Officer, Victorian Curriculum and Assessment Authority**

VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY



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1 June 2010

Mr D.D.R. Pearson  
Auditor-General  
Victorian Auditor-General's Office  
Level 24, 35 Collins Street  
MELBOURNE 3000

Dear Mr Pearson

Thank you for your letter of 19 May 2010 inviting management comments on the proposed report: *Administration of the Victorian Certificate of Education*.

The VCAA welcomes the overall positive conclusions and has been discussing aspects of the report related to improved compliance, training, security and monitoring processes. I request that the attached management response be included in the report for tabling.

The VCAA's contact is Dr David Philips, General Manager, Assessment and Reporting Branch, telephone 9651 4400, should you wish to discuss the response and any matters further.

Yours sincerely

**JOHN FIRTH**  
Chief Executive Officer

The Victorian Curriculum and Assessment Authority provides high quality curriculum, assessment and reporting that promotes individual lifelong learning.





**RESPONSE provided by the Chief Executive Officer, Victorian Curriculum and Assessment Authority – continued**

Attachment 1

**Administration of the Victorian Certificate of Education Audit: Response provided by the Chief Executive Officer, Victorian Curriculum and Assessment Authority**

The Victorian Curriculum and Assessment Authority (VCAA) welcomes the Auditor-General's report and is delighted to note its positive conclusion that the VCAA has established strong processes and quality controls to effectively administer VCE assessment and reporting.

As part of its focus on continuous improvement, the VCAA has been reviewing the guidance provided to schools on the VCE and has increased its use of data to monitor the effectiveness of its processes. The results of this audit will further contribute to VCAA's enhancement of its procedures for assuring high quality assessment in the VCE, and in this context the VCAA accepts all recommendations contained in the report, recognising that implementation of the majority of the recommendations will be contingent upon the availability of additional resourcing by DEECD.

Response to specific recommendations:

- 1a. **VCAA should improve its systems for managing coursework audits and responding to the findings.**  
*VCAA **accepts** this recommendation. The VCAA will fully review the process of coursework audits and develop a plan of action for improvement to be implemented in 2010.*
- 1b. **VCAA should provide more structured training in assessment development techniques to exam panel members and develop a planned process of self review and evaluation for all exam panels.**  
*VCAA **accepts** this recommendation which is contingent on the availability of additional funding. The VCAA will develop a proposal for a structured program of training for exam panel members and seek funds to support its implementation.*
- 1c. **VCAA should make better use of quantitative data to inform exam review processes as part of a formal program of continuous improvement.**  
*VCAA **accepts** this recommendation, noting that it already makes extensive use of data to monitor key processes. The VCAA is developing a framework of quantitative measures and a coordinated schedule for regular reporting of these.*
- 2a. **VCAA should strengthen its security practices by introducing a program of regular real-time audits of printers' premises and exam centres.**  
*VCAA **accepts** this recommendation, noting that it has conducted regular real-time audits of printers' premises and will continue to do so. The extent to which the VCAA can conduct real-time audits of exam centres is contingent on the availability of additional funding.*

**RESPONSE provided by the Chief Executive Officer, Victorian Curriculum and Assessment Authority – continued**

- 2b. VCAA should increase the number of schools subjected to moderation by visitation.**  
*VCAA **accepts** this recommendation which is contingent on the availability of additional funding.*
- 2c. VCAA should explore opportunities for the wider application of online marking.**  
*VCAA **accepts** this recommendation which is contingent on the availability of additional funding.*





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