

## Supporting Flexible Learning Opportunities

Based on the knowledge generated from the Australian Flexible Learning Framework projects and selected external literature, the Quick Guides series provides an introduction to key issues related to flexible and online delivery of Vocational Education and Training (VET).

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# Assessment and Online Teaching

## Australian Flexible Learning Quick Guide Series

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## Scope of this guide

This Quick Guide looks at the nature of assessment in a changed (and changing) Australian Vocational Education and Training (VET) context, and considerations and issues for online teaching.

Specifically this Guide looks at why the topic of online assessment is important, key research projects that are looking at online assessment in the VET context, current uses of online assessment, issues such as validity, reliability, fairness, and flexibility (including the hot topic of plagiarism), current barriers to the use of online mediums for assessment, and the impact on selection of assessment strategies and assessment management processes.

This Guide will be of relevance principally to teachers and designers of content and teaching processes, and in particular those operating within the Australian Quality Training Framework (AQTF) which governs teaching, learning and assessment standards within registered training organisations. It may also be of interest to managers and policy makers within VET.

## Why is it important?

Assessment plays an important part in the learning process – both summative and formative assessments inform progress and guide learning; it is essential to the accreditation process; and, results are used in all sorts of ways to measure outcomes and success of the student, teacher, course, or institute. Self assessment encourages student independence, and helps students develop the necessary skills for autonomous (and lifelong) learning. Assessment, especially when embedded within an ‘authentic’ learning tasks or exercises, can also be an essential part of the learning experience.

Principal reasons why online assessment is of fundamental importance:

- Student learning and behaviour is affected by and often led by assessment requirements (Ramsden in McLoughlin & Luca 2001).
- When designing learning programs, the assessment criteria and assessment constraints are usually key determinants of the teaching and learning strategies chosen. If teachers are to engage in new forms of teaching and take advantage of the greatly enhanced teaching options now possible through online and mixed-mode teaching then it stands to reason that we need to unpack assessment options and issues if online teaching and learning is to be maximised.
- Effective flexible learning regimes require assessment to be appropriately designed to match the new learning environments and diverse clientele (ANTA<sup>1</sup> in Clayton & Booth 2000; Booth, Hartcher & Hyde 2002).
- There is a new wave of pedagogy advocating ‘alternative assessment’ in which assessment is integrated with learning processes and real-life performance as opposed to display of ‘inert knowledge’. Known as ‘authentic assessment’ it is very much based on the *constructivist* approach that enables students to demonstrate knowledge by working on authentic tasks, putting students in control of their own learning (McLoughlin & Luca 2001, p. 421). Constructivism is a theory of learning that advocates that students construct meaning through active participation with the environment and with others, incorporating new information with existing knowledge.
- The introduction of Training Packages and the Australian Quality Training Framework (AQTF) has focussed attention in the VET sector on the quality of assessment. There is an increased emphasis now on the need for continuous improvement of assessment strategies and processes (Booth, Clayton, House & Roy 2002, p. 4).
- Developing expertise and capabilities in online assessment can provide market opportunities. Many industries, particularly larger ones, have a major challenge managing skill development of employees and a lot are now developing their own in-house training programs. VET is expert in credentialing. Opportunities exist for VET to partner with industry to offer flexible assessment against industry standards, providing the sector can adapt to industry needs (Anderson 2001).

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<sup>1</sup> Clayton & Booth 2000, quoting Issues Paper, ANTA National Flexible Delivery Task Force, 1996.

## Key VET projects relating to assessment

Compared to the number of articles and research on online teaching and learning, there are few articles that specifically address *online* assessment (Anderson 2001) and many practitioners are seeking guidelines (McLoughlin & Luca 2001). A number of VET research projects are currently in progress aimed at addressing this void.

### Recent research available

- *Online Assessment as an Integral Part of Flexible Online Delivery* by Strategy 2001 Flexible Learning Leader Janice Anderson, Canberra Institute of Technology. A final report summarises findings from literature reviews, conference participation, and visits to 20 Institutions in Australia and New Zealand.  
[http://flexiblelearning.net.au/leaders/past\\_fellows/2001/janice\\_anderson.htm](http://flexiblelearning.net.au/leaders/past_fellows/2001/janice_anderson.htm)
- Project managed by NCVET *The Development of Quality On-Line Assessment in VET* (Booth et al. forthcoming), being conducted by the Vocational Education and Assessment Centre (VEAC) at TAFE NSW and Canberra Institute of Technology. The final project report is due to be released shortly. A number of papers and progressive reports are available and are listed in the references.  
[http://www.ncver.edu.au/research/proj/nr1F02\\_1.pdf](http://www.ncver.edu.au/research/proj/nr1F02_1.pdf)

### Research in progress

- The Australian Flexible Learning Framework is conducting an Online Assessment Strategies and Models project in 2003 which produce a professional development website. This website will be available on flexiblelearning.net.au from Jan 2004. For more information on this project visit <http://flexiblelearning.net.au/projects/onlineassessmentstrategies.htm>
- An NCVET managed research project by The Centre Undertaking Research in Vocational Education (CURVE) at Canberra Institute of Technology, and The Vocational Education and Assessment Centre (VEAC) at TAFE NSW – on *How Flexible is Assessment in the Flexible Delivery of VET* (Clayton & Booth forthcoming). At the time of writing the final report was not yet available. An interim conference paper is listed in references under Clayton and Booth (2000).  
<http://www.ncver.edu.au/cgi-bin/gda.pl?id=1712>
- TAFE Frontiers Project *Assessment for Online Learning* by Linda Wyse & Associates. This project aims to develop a Practitioner's Guide for Online Learning which consists of a selection of case studies, a collection of online assessment exemplars and a framework for addressing online assessment issues and practices, including tools and resources for practitioners.  
<http://www.tafefrontiers.com.au/content/projects/assess.html>

Note when searching the literature there is a wealth of experience to be mined in the distance education literature as well as the online literature. Distance education is built around autonomous and independent learning and has a long history in pedagogy, learning support, and systematising product development and learning management for off-campus teaching.

## Underpinning requirements

Assessment within VET is governed by the principles set out in the Australian Quality Training Framework Standards for Registered Training Organisations. These principles apply regardless of the mode of delivery. Online assessment like other forms of assessment needs to be valid, reliable, fair, and flexible.

Further, it is a requirement for training and assessment to be equitable for all persons, taking account of cultural and linguistic needs (AQTF, Section 8.1 viii). Assessment should be sufficiently flexible and diverse to account for differing needs and circumstance of students undertaking online study.

Flexibility can mean:

- providing assessment choices
- negotiating assessment tasks to account for student's circumstances and needs
- providing flexibility in timelines or providing contingency options to cater for unreliability or differences in technology connections
- providing choice in location of assessment as students do assessment tasks in their place of study which can be home, work or wherever they choose, providing supervision is not required.

The extent to which these choices are available in online learning depends on many factors, including pragmatic issues of managing learning and learners, teaching strategies employed, requirements to start and finish on given dates and so forth.

## Key issues

Key issues for the online learning context are:

- Identifying what assessment methods can effectively be transferred to or be done better or differently online
- Identifying whether and how the medium and mode impacts upon the validity, reliability, fairness, and flexibility of assessment (including plagiarism concerns)
- Identifying the barriers to using online assessment
- Understanding whether and how online changes how we select, monitor, and manage assessment activities.
- Authentication for summative assessments.

## What can effectively be transferred to or be done better or differently online?

Assessment for online is underpinned by the same principles of validity, reliability, flexibility and fairness, and uses many of the same strategies used in traditional face-to-face teaching (Booth, Clayton, Hyde, Hartcher & Hungar 2002). What differs mostly is the context of the assessment, the interactions between assessor and those being assessed, and collection and administration processes.

Online can be used:

- as a stand-alone source of evidence for assessment
- as a contribution to the total assessment process
- or
- for the collection, transmission and administration of assessment materials and resources. (Toolbox Central Job Aid<sup>2</sup>).

Online assessment can provide:

- greater flexibility in where, when, and how assessment is undertaken
- students with a greater range of options to demonstrate their knowledge and skills.

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<sup>2</sup> Toolbox Central – Job Aid 'Plan Online Assessment'.

## Online Assessment Options

Some of the online options listed in the literature include:

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|---|--|
| • Written assignments                         | • Participation in online discussions        |
| • Essays                                      | • Publication of student work /presentations |
| • Online quizzes and questions                | • Experiential activities, such as role-play |
| • Collaborative assignment work               | • Debates                                    |
| • Portfolios                                  | • Reviews                                    |
| • Online Exams (open-book; structured; timed) | • Journals and reflection                    |
| • Practicals                                  |  |

Assessment can be by: teacher, self, peer, or by an external person or group.

Online assessment, like online teaching, is still very much in an embryonic state (Hyde, Booth & Wilson forthcoming). The most common online assessment strategies used within VET currently are: using computer communications as a transfer medium to submit and comment upon assigned work such as essays; compiling and submitting portfolios; and for computer testing, i.e. short answer, multiple choice type questions and quizzes. There is growing interest in communication tools for learning interactions (Booth, Hartcher & Hyde 2002) and evidence that this can work well, but the use of conferencing and online group work as assessable activities is not yet wide-spread. Whilst numerous papers report innovative examples of online assessment such as group discussion, simulation tools, various types of case studies and project work, and peer and self assessment, their use is not yet common place (McLoughlin & Luca 2001; Freeman & McKenzie 2000).

Online does not as yet lend itself easily to the testing of competencies that require the demonstration of a particular skill or work-based task (Booth, Hartcher & Hyde 2002).

Both summative and formative assessment have very important roles to play in flexible learning. Currently online is used more for 'summative' assessment than for formative assessment (Anderson 2001; Booth, Hartcher & Hyde 2002).

"Authentic" online assessment that is integrated with the learning experience, not separated from it, is considered to be one of the most effective ways of measuring student's learning. According to Anderson (2001) it promotes skills transfer and deeper level understandings – 'learners are assessed within a relevant context and are required to collaborate extensively to produce a product that demonstrates the knowledge, understanding and skills they have learned ...and the ability to manage ...activities'.

## Whether and how the medium and mode impacts upon the validity, reliability, fairness, and flexibility of assessment?

Challenges include:

- whether and how to measure student participation in online discussion and activities
- how to measure individual performances within group assignments (note this is not just an online challenge)
- authentication of student work
- preventing and detecting plagiarism
- issues of security
- connecting the assessment to the teaching and learning intent and strategies
- encouraging students to take greater responsibility for their own learning through such techniques as critical reflection, self and peer review, whilst meeting the criteria for assessment standards.

## Measuring student participation in online discussion and activities

Communication and interaction are essential elements within learning. There are views that 'required' participation and input into online discussion forums, chats, emails, face-to-face seminars provides tangible benefit to the learner and impacts upon learning outcomes; it helps keep learners motivated and involved (Toolbox Central Job Aid<sup>3</sup>); enables students to support each other's learning; and provides opportunities for peer and teacher feedback to individuals and student groups (Salmon 2000). Some have found from experience that unless participation is assessable, students do not feel compelled to participate hence reducing the effectiveness for others (Hyde, Booth & Wilson forthcoming). There are counter views also about compulsory requirements for interaction and collaborative endeavour and its benefits for learners (see McLoughlin and Luca, page 419).

Maor (1998) claims that this presents three interesting dilemmas:

- Should participation be compulsory and therefore be an integral part of assessment?
- How does one assess students participation and contribution in a fair and equitable way?
- How should the interaction be qualified?

Maor discusses these dilemmas in an interpretive research study on student online participation conducted in a post-graduate Internet-based distance education unit teasing out the arguments and decisions faced by many online teachers.

Another difficulty for teachers is authentication – knowing that the person participating is in fact the person they profess to be.

Hyde, Booth and Wilson in their forthcoming publication provide some useful guidelines on assessment strategies that involve online communication and interaction.

An associated issue is that of measuring techniques and the ethical considerations. Online technologies can provide the means to track and record student work and conversations. Extreme care needs to be taken to ensure privacy and confidentiality requirements are observed and that the learning environment is established in a way that students feel comfortable and confident to work in the online setting.

Other areas of simultaneous opportunity and challenge afforded by online teaching is that of peer and student self-assessment. Two informative papers are:

- 'Self and Peer Assessment of student teamwork: Designing, implementing and evaluating SPARK, a confidential, web based system' (Freeman & McKenzie 2000).
- 'Assessing Student's Self-Regulatory Skills' (McMahon & Luca 2001).

Major issues identified were student readiness and ability to effectively participate in these forms of assessment, and design issues to ensure integrity and fairness.

## Measuring performance within group assignments

As with group assignments in traditional face-to-face on-campus teaching, online assessment requires the selection of appropriate and defensible assessment criteria. Assessment might be of the product or output of the group work, on process only, or a mixture of both. With online assessments consideration also needs to be given to disadvantages that may occur because of student access to technology.

## Authentication and Plagiarism

Authentication and plagiarism are topics of great concern to teachers and sceptics of online teaching. Concerns are fuelled by reports such as those reported in *The Australian* (Buckell 2002) wherein it was claimed that 8 per cent of university students were found to have pilfered large amounts of text from the web. Hyde, Booth & Wilson (forthcoming) suggest that the potential for more cheating and plagiarism to occur in online, as opposed to other modes, is probably overstated as cheating has always been with us and there are strategies that can be adopted to minimise its occurrence.

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<sup>3</sup> Toolbox Central – Job Aid on 'Assessment Issues'.

There are two types of plagiarism: intended copying of direct passages of other people's work and ideas without acknowledgement, and, lack of acknowledgement through poor or incorrect referencing techniques. The latter points to the need for inclusion of instruction and guides on referencing to include the need to acknowledge sources obtained from the web and the correct ways of acknowledging online material. Students need to know that information freely available on the web does not mean 'free to copy' without due acknowledgement or permission! Online courses should display clear guidelines.

With regard to combating plagiarism software programs are available to assist in the detection of plagiarised work. The software used by CAVAL on behalf of the six Universities involved in the study reported in *The Australian* was a web-based detection program called 'Turnitin.com', but a variety of other software programs are also available.

Detection is but one avenue. It is far better to prevent than detect. McLoughlin and Luca (2001, quoting Berge et al.) claim that "wisdom might be served by using alternative form of assessment of student understanding". For example using a series of sequential exercises, building upon one another so that issues of security become less of a problem. Other strategies include providing a mix of assessment strategies that allow students to demonstrate ability and construction of knowledge in a variety of ways that require them to give examples, or draw from class or student-teacher discussions over a period of time; encouraging the development of portfolios of work; integrating teaching strategies that focus on student enquiry and investigation; and adopting authenticated assessment approaches in which the assessment is situated in a real or simulated workplace (Hyde, Booth & Wilson forthcoming). Clearly there is also merit in getting to know one's students although this is less easy in high enrolment classes.

Hyde, Booth and Wilson (forthcoming) suggests "teachers need to adopt a risk management approach to the issue of authenticating assessment and make judgements concerning the identification of critical assessments that absolutely must be authenticated" and those which are less critical.

## Security

Issues of security in online assessment most often relate to:

- dependability and reliability of systems so that students (and teachers) are not disadvantaged if systems fail or have downtime
- integrity of data of online systems
- prevention and tracking of unauthorised access.

Teachers and students need to be assured that adequate security is in place. The importance of management support cannot be overstressed.

## Connecting assessment to teaching and learning

Assessment strategies and tasks should be aligned to the learning objectives and learning process, and the connection should be made explicit to students so that they can see the relevance of the assessment to the learning task (Leask 2001; Hyde, Booth & Wilson forthcoming; Toolbox Central Job Aid<sup>4</sup>). It should be planned from the inception of the teaching program or learningware design (Booth, Hartcher & Hyde, 2002, p. 3; Hyde, Booth & Wilson forthcoming).

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<sup>4</sup> Toolbox Central – Job Aid on 'Develop Learning and Assessment Strategy'.



McLoughlin and Luca (2001) demonstrate just one way student activity and assessment processes can be integrated in participatory forms of assessment:

<b>Modes of student interaction</b>	<b>Student contributions to the unit</b>	<b>Interactive assessment activities</b>
Attending	Design and develop team web site	Intra-team peer review
Practicing	Post solutions to weekly problems	Intra-team peer review
Discussing	Post weekly journals	Inter-team peer review and commitment to tasks
Articulating	Develop electronic portfolio	Critique and peer feedback on portfolios
	Develop a team contract outlining team responsibilities	Negotiate roles and commitments for each team member

This model shows how each component relates to the pedagogic principles of attending, practicing, discussing and articulation, identified in Laurillard (1996), that underpin effective learning.

Using a framework such as this may be a useful way of exploring the connections between activity and assessment in some teaching situations. Teachers working together may come up with other similar models.

When developing online assessment it is recommended that teachers and practitioners consult with others on the nature of the assessment task to ensure the assessment is valid, viable, and authentic (Toolbox Central Job Aid<sup>5</sup>).

## Student responsibility

Online learning by its very nature requires a degree of independence in students and the ability to problem solve (that is, the ability to solve learning problems as well as technical problems). Working off-campus away from teachers and peers means that students have to take on greater responsibilities themselves if they are to succeed in online courses.

In addition, there is a view within VET and higher education that students be encouraged to take on further responsibilities for their own learning in keeping with expectations of employees, and the community at large. There has been a demonstrable shift to more student-centred approaches to teaching and learning that encourage students to do this. It follows that this same principle should be extended to assessment (Anderson 2001).

Self-assessment, peer assessment, discovery learning, reflection and articulation are just some of the ways students are being encouraged to manage their own learning. Other ways include options to negotiate assessment activities, mode of presentation, timing of assessment (though this is not always practical or desirable), and decisions about grading or mark allocations. The challenge remains as always though to find measurable evidence to show attainment of competencies and desired attributes.

<sup>5</sup> Toolbox Central – Job Aid on ‘Assessment Issues’.

## What are the Barriers to Online Assessment?

Barriers to effective use of online assessment identified by Paulsen (2000) in an international study to inform decision makers included: public and institutional regulations, traditions for physical attendance, technical limitations, student identification, and detection of plagiarised digital material.

Bonk, reporting on his research of online learning experiences within educational institutions (2001) and training corporations (2002), claimed that non-use and feedback from research surveys indicate a need for more sophisticated and a greater range of online assessment options to increase both use and effectiveness of online assessment. And, that there were shortcomings in the current range of options.

Clearly technology lends itself better to some forms of assessment than to others, but mostly barriers often relate to teachers knowing sufficient about the available options and being able to confidently connect the appropriate assessment options to the different teaching and learning strategies they might employ. Teachers also need to feel confident they can overcome some of the issues associated with online assessment.

The pragmatics of time, available resources, cost, and lack of support are also often listed as barriers (Booth, Hartcher & Hyde 2002; Anderson 2001).

## Does online change how, when, and where we select, monitor, or manage assessment?

The short answer is – yes, it does. Or at very least electronic communications have impacted very significantly on teaching and learning options which in turn will challenge traditional assessment regimes. For example:

- Formal vocational learning is no longer confined by institutional boundaries but can occur in multiple contexts including workplaces, home, in communities and in any combination, and may now be provided by public, private and community organisations.
- We are seeing a significant growth in demand for single unit enrolments, also adult learning and return to study options afforded by easier access and greater flexibility in study, also changing market expectations.<sup>6</sup>
- A further shift is occurring with the introduction of Training Package specifications, demand for short, sharp training against units of competence.
- In many instances we are seeing changes in the demographics, and ability levels of students participating online which presents challenges for online teaching and assessment particular given the need to provide for cultural and different needs of students (Leask 2001).
- With the maturing of online provision there is also greater pressure to acknowledge the impact of globalisation within the content taught and teaching strategies employed. As assessment is meant to transparently link to both, inevitably there will be changes.

Such challenges of course need to be considered within the strategic and governing frameworks within which the provider operates.

As well, online assessment techniques will broaden and be refined as technical capabilities expand, access becomes less problematic, and the status of teaching, learning and assessment online matures.

## Management of Assessment – Considerations

Of prime concern to many is the potential conflict between flexibility and approaches that are valid, reliable and fair. It requires careful consideration, judgement, and a balanced approach to achieve all criteria.

Off-the-shelf and custom built systems to manage or monitor student learning and assessment are increasing in number and are used to provide efficiency, faster and improved turn-around of feedback to students, or as part of a total technical solution in support of online learning. Along with this array of options is a state of confusion over system choice. Teachers are looking for guidance. As well, time needs to be allocated to developing suitable assessment material.

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<sup>6</sup> NCVER (2000) Student Outcomes Survey 2000, National Report, Adelaide, cited in *TAFE NSW 2001*.

The efficiency argument is a debatable point. Whilst there is potential to save on teacher time, the effort in establishing quality testing templates and databanks of questions and so forth is often underestimated. There are some concerns also that some online assessment systems encourage surface recall rather than deeper level learning (Hyde, Booth & Wilson, forthcoming) making it all the more critical for assessment to be designed around the learning purpose not dictated by technologies available.

As online learning becomes more mainstream, providers recognise that online learning is an option in all teaching and not something to be accounted for separately, assessment systems will be integrated with other student management systems and business processing. Evaluators of the Australian Flexible Learning Framework found that institutions and providers are only just starting to grapple with the need for integrated management systems to improve quality, efficiency and measurement capabilities (KPMG 2002).

On a pragmatic level writing online assessment tasks to be read by students requires careful attention to detail. Unlike in face-to-teaching, it can be time-consuming for students to seek clarification or further explanation. Students should be told:

- what the assessment task is
- what references or resources may be useful or required
- timelines
- who to contact for assistance or clarification
- what standards are expected for a given task and the criteria upon which it will be judged
- how the particular assessment task relates to the learning goal and competency outcomes; and
- the relationship to other assessment tasks (including on-the-job assessment).

Providing examples wherever possible can avoid misunderstandings and can assist students interpret the requirements.

Students should also be given the opportunity to rehearse wherever this can appropriately be done. Practice tests, past exams, additional or extension activities are just some of the ways to do this. In on-campus teaching students can attend library or be given the opportunity to rehearse in class. In online courses the student may or may not have this option, hence opportunities should be built into the online learning provisions if they do not.

Assessing student readiness for online learning and online assessment is another important consideration. It should not be assumed that students are ready and able to cope with new forms of learning and assessment. Preparation may be required and support necessary (Hyde, Booth & Wilson forthcoming).

## Assessment viewed within the development life-cycle

The term 'assessment' is often intertwined with 'evaluation' as is the case in Bonk's (2002) study of training provider experiences of online learning as assessment. Student and user feedback quite logically are a key process in the refinement of systems and assessment decisions.

## Useful Tools and Resources on Online Assessment

- The Australian Flexible Learning Framework Flexible Learning Innovation project developed a computer-based *assessment generator* that will enable providers to store, search, edit and generate items that be used for assessment and learning purposes.  
<http://flexiblelearning.net.au/productsandservices/assessmentgenerator.htm>
- The NET\*Working 2002 Online Conference has a number of online assessment tools within the 'Cool Tools' segment of the conference site which has been opened to the public.  
<http://nw2002.flexiblelearning.net.au/>
- Many US and British publishers of texts for tertiary education include banks of multiple choice questions on websites or CDs that are provided to educators who adopt their text (Anderson 2001).
- The NCVET website section on Assessment provides annotated links to research papers on the topic of assessment. See  
<http://www.ncvet.edu.au/assess.htm>
- *The development of quality on-line assessment in VET* (Booth et al. forthcoming), will list key points for high quality assessment online.

- *Maximising Confidence in Assessment Decision Making* published by NCVET, provides substantial coverage of assessment decision making and quality management with VET. Providing both a theoretical and practical framework it covers all aspects of assessment design, implementation, management, and improvement of assessment strategies and systems. This resource and the principles and policies upon which it is based is relevant to all training that leads to AQF qualifications, regardless of the content or mode of delivery. Although it is not specifically about online assessment, for those not familiar with assessment policy and structures this is a recommended first read (Booth, Clayton, House & Roy 2002).  
<http://www.ncver.edu.au/research/proj/nr9029.pdf>

In providing a range of tools and resources to draw from, Anderson (2001) warns of the dangers in educators adopting an 'atomistic approach' to assessing knowledge and skills rather than taking a bigger picture view and visualising and preparing holistic online assessment material.

## Conclusion

Considering principles and quality measures for online assessment in the context of online learning has caused people to revisit the important elements of assessment and to reflect on the *whys*, and *consequence* of assessment, as well as the *how to* and *options*. It has raised consciousness on the topic (Anderson 2001). This consciousness now needs to be applied within mainstream frameworks such as the AQTF and a culture of critical reflection, sharing, and continuous refinement needs to be established.

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