

# Transforming Assessment

## A Practical Overview of E-Assessment for Teachers



### WHAT IS E-ASSESSMENT?

E-assessment is the use of digital devices to assist in the assessment of student learning.

### WHERE CAN IT BE USED?

Digital devices can be used to design, deliver and administer assessment types across four areas:

#### Diagnostic

Introductory low stakes tasks which enable:

- students to determine their preparedness for their current learning activities
- teachers to adjust their introductory learning activities

#### Formative

Low stakes tasks where students receive prompt post-task feedback in order to:

- have a greater understanding of their progress
- be better prepared to undertake future learning or a future summative assessment task

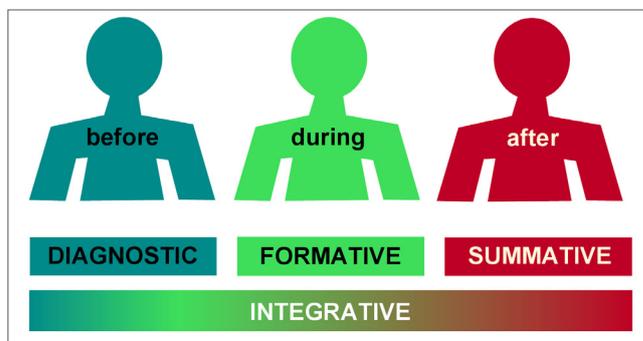
#### Summative

High stakes tasks used primarily for progression and certification purposes

#### Integrative

Low or high stakes tasks which provide students with the opportunity to:

- make judgements about the quality of their own learning or performance by reviewing their approach to the task
- understand discipline standards and teacher expectations
- identify good quality responses



*Forms of assessment and their place in the learning process*

### WHY MIGHT E-ASSESSMENT BE USEFUL TO ME?

E-assessment offers a range of potential benefits for assessors, candidates, regulators, industry and professional bodies. These benefits include:

1. Efficiency
2. Effectiveness
3. Authenticity
4. Engagement

#### Efficiency

*Timeliness* – students can undertake the assessment outside normal tertiary institutional operating hours

*Flexible delivery* –

the assessment can be undertaken from any location

*Automatic processing* –

self-correcting quizzes enable teachers to spend less time performing the highly repetitive tasks associated with managing assessments, especially for large classes

*Reliability* – students in large groups experience the same conditions of assessment regardless of location, teacher/academic and/or invigilator

*Effective storage and distribution of grades* – online systems enable student work and grades to be automatically archived for quality assurance purposes



## Effectiveness

*Immediate feedback* – online quizzes enable students to receive feedback immediately after completing the assessment

*Analysis of question validity* – student/group performance for each question can be quickly accessed in order to facilitate validation of the assessment

*New question types* – question types such as Likert Scales, Embedded Answer and Drag and Drop extend upon traditional quiz/test methodology

## Authenticity

*Access to people and resources* – students can remotely access subject experts and online resources

*Simulate real world* – students can use virtual worlds and online simulators in order to practice tasks that are normally prohibitively expensive or risky

*Able to set complex tasks* – individual student contributions can be tracked in complex tasks such as online collaborative role plays or scenarios

## Engagement

*Multimodal formats* – students can access high quality online interactive content using 3D games, virtual worlds and online quizzes featuring embedded video and 3D/2D animations

*Able to use virtual worlds and role plays* – students can work safely to collaboratively solve problems in a virtual world modeled on a real life environment

*Able to use self and peer review* – blogs, wikis and e-portfolios can be used by students to conduct self and peer review activities

## WHAT COULD I DO WITH E-ASSESSMENT?

Listed below are a range of both common and evolving e-assessment approaches.

### Selected response questions

The most commonly used approach, whereby students complete a series of questions that have a pre-determined expected response. This approach enables students to receive instant feedback and so reduces the amount of time spent by teachers correcting and responding to individual students.

The questions are generally authored within a learning management system or through a SCORM compliant authoring tool (eg Articulate). Question types may include:

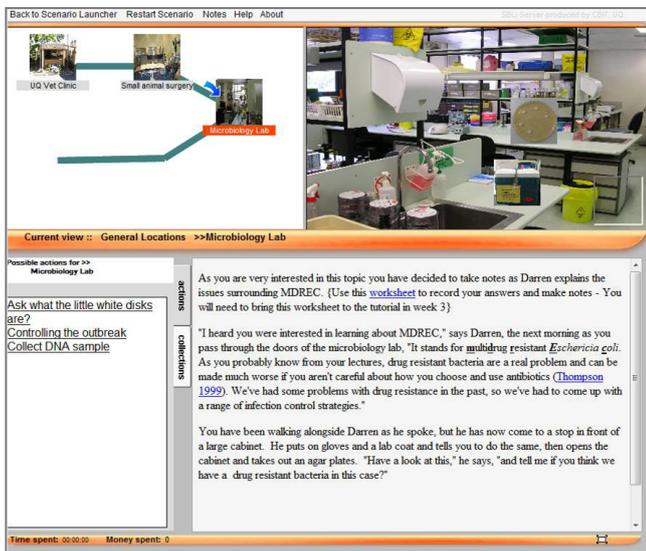
- Multiple Choice
- True-false
- Ordering / Matching / Sequencing
- Cloze exercise (fill-in-the-blanks)
- Hot spot
- Likert scale

### Collaborative assignments

students work remotely as a small group in order to complete a task which generally encompasses a problem solving and/or real life dimension. Students often have the option of working in real time (synchronous) or at different times (asynchronous) and most online applications enable each student's participation to be individually assessed.

Species	Molarity
H <sup>+</sup>	2.341e-3
OH <sup>-</sup>	4.312e-12
Cl <sup>-</sup>	1.000e0
C <sub>2</sub> H <sub>5</sub> NH <sub>3</sub> <sup>+</sup>	9.977e-1
C <sub>2</sub> H <sub>5</sub> NH <sub>2</sub>	2.341e-3

Screenshot from chemistry virtual laboratory activity.  
<http://www.chemcollective.org/applets/vlab.php>



Screenshot from SBLi scenario based learning activity.  
<http://www.sblinteractive.org>

## Online role-plays

students use a persona to interact with other students in order to collaborate, negotiate or debate an issue. They are used when students are required to understand different stakeholder perspectives in a complex situation where the student responses are not predetermined.

## Scenario-based activities

students respond as themselves to a prescribed set of questions where each response determines the subsequent information or questions presented. These tasks usually have a designated end point(s). Students are assessed on the quality of their decision-making and/or on the path that they have chosen to solve a problem.

## Virtual laboratory activities and field trips

students work in a virtual and/or remote environment to complement/replace expensive laboratory sessions. In a remote setting, students can download data to their local computer from a remote sensor for use in the task. In virtual activities students collect and analyse authentic data.

## E-Portfolios

students collate a range of their work using an online application (eg *PebblePad*, *Mahara*) in order to demonstrate the progression of their learning and/or showcase their skills and knowledge. They are often used to facilitate reflective practice and to evidence vocational outcomes.

## Serious games

students work toward achieving clearly articulated goals, outcomes and rewards in a game environment rich in interactivity and high quality 3D graphics. The game provides students with constant feedback in response to their actions and they are rewarded at regular intervals to maintain motivation to complete the task.



Screenshot from *Second Life* in teacher education.  
<http://www.virtualprex.com>

## Virtual Worlds Using Avatars

students work in a simulated multiuser 3D virtual world where they are represented as a character (Avatar). A physical environment is often re-created as a 3D simulation for students to explore, build their own objects and complete specific tasks. Reasons for their use include simulating a restricted, expensive or dangerous environment and enabling students to explore complex interpersonal tasks not readily facilitated in a physical face to face setting.



Transforming Assessment is an Australian Learning and Teaching Council Fellowship activity working to improve how e-assessment is used within tertiary education.

## WHAT TECHNOLOGY CAN I USE?

Whilst e-assessment is commonly incorporated into the institutional learning management system (eg *Blackboard* or *Moodle*), other delivery platforms may include:

*Specialist e-assessment software* – accessed through web browsers and/or local computers eg Questionmark Perception, TestPilot

*Local Area Networks* – accessed from local computers, often created and/or managed by Faculty teaching and/or professional staff

*Locally hosted websites* – accessed through web browsers, often created and/or managed by Faculty teaching and/or professional staff

*Web 2.0 / Cloud Computing* – accessed through web browsers, eg *YouTube*, *PBWorks*, *Wordpress*, *Slideshare*, *Google Docs*.

*Virtual Worlds* – eg *Second Life*, *Open Sim*



Screenshot from a wiki with embedded video.

## HOW DO I KNOW IF I AM USING THE TECHNOLOGY EFFECTIVELY?

Online education can provide more widespread access to content and learning, but it is the curriculum design that surrounds the content and the scaffolding provided by you as the teacher that provides the quality experience for students.

Numerous guidelines have been written about how to use technology effectively in education; however, the issue is not a shortage of advice, but rather the practical means to appropriately integrate this advice into your existing workload and the limited assistance that many of you will encounter in your institution.

Don't try and do everything yourself; seek the help of other teachers and the support mechanisms in your institution. Reuse effective designs and the work of other teachers.

The best way to know if you are using the technology effectively is to ask your students. They will quickly let you know if this is assisting them in their learning.

## MORE INFORMATION

Visit [www.transformingassessment.com](http://www.transformingassessment.com) for access to:

- sample e-assessment approaches
- e-assessment case studies
- getting started information
- literature references on e-assessment
- reports on e-assessment use

Produced by Geoffrey Crisp and Steve Linquist as part of the Transforming Assessment ALTC Fellowship.



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