

CHARLES STURT
UNIVERSITY



Scholarship in Teaching Fund
Project Report

Education driving technology:

*An investigation into the effectiveness of online multiple choice
assessment as a teaching and learning tool*

Prepared by

Janet Buchan

Michael Swann

Dr. Jenny Wilkinson

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Executive summary

This report presents the results of a two year study into online assessment at Charles Sturt University. The preliminary aims of this study were to investigate on a broad scale the scholarly use of online multiple choice assessment (formative and summative) as part of active teaching and learning across the university. A second primary aim was to develop a model of constructive alignment between learning outcomes and multiple choice questions.

The study was divided into three parts.

- Firstly, an investigation into the use of online multiple choice as an assessment approach. This included the use of broad ranging subject surveys (staff and student); the use of individual case studies on specific subjects; and an investigation into the use by lecturers of CSU's OASIS specific (Online Assessment Submission Information System) items in the Online Evaluation Survey system's customisable item bank.
- The second part of the investigation was the use of online multiple choice technology (OASIS) to develop a model of constructive alignment between subject learning objectives and multiple choice questions.
- The third and final part of the study which emerged during the course of the study was tracking the development and upgrade of the OASIS software in response to user requirements and using feedback from the study to develop processes and guidelines for socially responsible online assessment leading to the introduction of *CSU Interact*.

The study found that the use of online assessment to enhance student learning is widespread across the University in all faculties and for both internal and distance students. The staff and student surveys primarily targeted the use of CSU's OASIS, although feedback showed that some staff and students are familiar with quiz tools from other institutions and those associated with textbooks. Responses to the student survey questions indicate that the majority of students surveyed agreed that the use of multiple choice questions *per se* was an appropriate way of conducting assessment in their particular subject and that online assessment exercises developed in their subject/s helped them to achieve the subject objectives. This compares favourably with staff perceptions where the majority of staff surveyed felt that the exercises helped their students achieve the subject objectives. Student access to a computer with the internet to complete was not noted as an issue with over 94% of students surveyed having access to a computer at home, and of those students who did not have access at home the majority accessed from work rather than the university. Concerns about the adequacy of technical skills of users for the online mode of assessment were allayed with only a small fraction of respondents (< 4%) reporting that their personal computer skills in accessing the Internet and navigating to the online tests were below average. However, in the interests of equity of access, this feedback has implications for academics, Student Services and others such as DIT and CELT involved in providing suitable support and training for students (and staff) in the use of online assessment tools such as OASIS.

It was found that across the faculties online multiple choice assessment tasks were designed to serve both formative and summative purposes. There was a variety of configurations of OASIS quizzes ranging from single submission tests for summative purposes, to multiple submission formative revision or self-assessment tasks. Multiple submission quizzes afforded students the opportunity to engage thoroughly with the learning material and where multiple submissions were allowed for a quiz the majority of students surveyed took advantage of this learning opportunity and over 20% of students surveyed reported accessing some quizzes more than six times.

Students found value in a variety of formal and informal support methods to assist their online assessment experience. These included communication with fellow students, online discussion forum, information on the CSU website, information in the subject outline, email to lecturer, IT Service Desk, face to face contact with the lecturer as well as combinations of the above support methods. This information has been used in the development of models for support processes for *CSU Interact* as well as feeding more specifically into the improvements in the support of users of OASIS.

The use of the OASIS-specific items in the item bank for customisable surveys in the Online Evaluation Survey (OES) demonstrates that a small number of staff are taking the opportunity to evaluate their teaching practice through the efficacy of the use of online assessment (via OASIS) as an enhancement to learning. This does not include those subjects where staff worked with the CELT OASIS coordinator and the Evaluation Unit to develop customised surveys specifically to look at issues associated with their approach to assessment. The low usage of some items in the OES is being reviewed by the Evaluation Unit and the results of this study will help towards those improvements.

Over the period of the study the investigators, in particular Janet Buchan in her liaison role as CELT 'OASIS coordinator', observed a variety of different ways in which OASIS as an online assessment tool is being used at CSU. Highlights of these have been reported as case studies (detailed reports in Appendix 4). OASIS is being actively used not only across all faculties, but also within different divisions. This includes the use by the Library in their ILIC (Information Literacy in Context) tutorials that are collaboratively developed with subject coordinators for individual subjects and administered via OASIS; and the use by Student Services in their Study Skills subjects. This understanding and awareness of the current and future use of online assessment across the University is informing the ongoing development of our Online Learning Environment (OLE) and the discussions around the potential of online assessment tools from within the Sakai network to service the University's future needs (Buchan, 2008a). We are now in a strong position to disseminate good practice around sound pedagogically design and practice in online assessment.

Part of this study was Michael Swann's development of a model of constructive alignment between learning objectives and multiple choice questions. The model employs the enhanced statistical functionality of OASIS to introduce and assess the role of *constructive alignment* in the teaching of ECO110 Microeconomics. The model is used to show how constructive alignment was applied to the online ECO110 Forum by relating specially selected commendation questions/learning tasks to those multiple choice questions that the error matrix had identified from the previous semester as high failure rate questions. This approach encourages student participation, peer support and a deeper – rather than surface – attitude to learning which lies at the heart of the constructive alignment pedagogy. While the initial results were generally encouraging, more data is required from semester 1 in 2008 and beyond before definite conclusions can be drawn about the benefits of constructive alignment in online testing for CSU students (Swann, 2008).

The final part of the study which emerged during the course of the research was tracking the development and upgrade of the OASIS software and associated support processes in response to user requirements. Feedback from the study has been used to develop processes and guidelines (Buchan, 2008a) for socially responsible online assessment leading to the introduction of *CSU Interact* and ongoing growth of the Online Learning Environment (OLE). These continue to be shared via professional development activities such as Foundations of University Learning and Teaching (FULT), Tertiary Teaching Colloquium (TTC) and professional development sessions led by the CELT professional development team and educational designers. Continual updates are being made to online Help documentation for staff and students associated with ongoing changes in the software and processes partly as a consequence of the move to Sakai (*CSU Interact*).

The intense involvement that the researchers have had with online assessment, and more specifically the CSU software OASIS, (both during and prior to this project), has put them in a strong position to input into improvements to online assessment at CSU. As the University makes improvement to its current system, and looks to the future (Buchan, 2008a, 2008b) the researchers constantly feed into requests for advice on upgrades to OASIS, user advice around potential new tools (Morton-Allen & Boyd, 2008) and day to day pedagogical application of our current tools. In all this, the background from this lengthy and wide-ranging scholarly research into online assessment keeps education firmly driving the use of technology at CSU.

A number of publications and presentations have resulted from this research with more planned (see p.15). A spin-off from the research association has been the development by Buchan and Swann of 'The Bridge Support Framework for online learning environments' (Buchan & Swann, 2007).

Introduction

This report presents the results of a two year study into online assessment at Charles Sturt University. The study was funded by a Scholarship in Teaching fund grant (see Appendix 5, Budget). The preliminary aims of this study were to investigate on a broad scale the scholarly use of online multiple choice assessment (formative and summative) as part of true active teaching and learning across the university. A second primary aim was to develop a model of constructive alignment between learning outcomes and multiple choice questions.

"It is not the technology that is most important but the activity it enables: the activity, not the technology, is what advances learning." (Oblinger, 2005)

Our initial project proposal had indicated that:

"The aim is NOT to promote any individual technology; the efficacy and analysis of CSU's online assessment tool, OASIS, has already been documented... Rather, it is to investigate on a broad scale the scholarly use of online (multiple choice) assessment (formative and summative) as part of true active teaching and learning across the university and then, importantly, to disseminate the findings of this research appropriately to assist staff in using online assessment methods to improve their teaching and to help their students achieve specific learning outcomes."
(Buchan, Wilkinson, & Swann, 2006)

In practice, as a result of the ongoing feedback from the surveys and results of our findings, the scope of the project developed more broadly and encompassed significant work in the development of specific online multiple choice assessment technology and associated guidelines and processes. This led to input into the introduction of the online multiple choice assessment tool OASIS, as a mainstream tool in *CSU Interact*. During the study, both as part of the study as well as part of the daily responsibility of Janet Buchan in her capacity as Learning Media Lab Coordinator and OASIS specialist technology coordinator, there were significant advances made in identifying key areas around social responsibility associated with online assessment, and developing processes to address these. We feel the contribution from this perspective has been particularly important with the advent of *CSU Interact*, and the access to an increased number of different online tools that can be used for student assessment.

Data from surveys used in this study together with feedback from other avenues into how staff and student perceive and use online assessment have been used to improve current

systems. In addition the research partially funded a trip to Canberra to research online assessment in other institutions. A report on this visit is included in Appendix 3.

During the research period the investigators fulfilled one of the aims of the research by presenting on OASIS and online assessment in a number of different forums within CSU), put out publications (see Publications and presentations section) and a number of presentations and publications are planned for the future (see Planned presentations and publications section).

Aims

The main aims of the research as outlined in the initial project proposal were:

1. to research the effectiveness of online multiple choice assessment as a teaching and learning 'tool';
2. to develop a model of constructive alignment between Learning Objectives and multiple choice questions which should (a) assist academic staff to design better on line assessment tests and (b) empower students to engage more efficiently in a clearly structured learning process;
3. to investigate and disseminate the findings of appropriate use of online multiple choice assessment for teaching & learning purposes;
4. to, by taking a longitudinal approach (over two years) to the online constructive alignment assessment model, develop feedback mechanisms to improve the quality of the student learning outcomes and, from an academic perspective, develop a more reflective approach to on-line assessment methodology which can be shared with the on-line academic community through conference papers and relevant journals.
5. to demonstrate true scholarship of teaching that contributes to the achievement of CSU's Key Objective to "*Continue to lead in the quality provision of flexible delivery of learning and teaching ...*". (University Strategy 2007-2011).
6. to explore, through reflective practice, the value of the relationship between subject expert (academic) and educational designer in designing assessment and using technology to enrich student learning.

Literature Review

In their study on 'Strategically re-positioning student assessment' James and McInnis (2001, p.3) suggest that 'Australian higher education has reached a point at which re-consideration of assessment practices needs to be placed at the forefront of efforts to improve teaching and learning'. To this end, we need to take cognisance of the changing nature of assessment that demonstrates a transition from a focus on testing to a focus on learning and transfer of understanding (AUTC, 2002a; McLoughlin, 2003).

"In the absence of evidence, it is probably safe to assume that CSU subject coordinators employ a range of formative and summative assessment instruments. Of course, progressive formative assessment feedback can be quantified and fed into the summative assessment grade (Naidu, 2003, p. 38). However, it is unwise to restrict our thinking on assessment to the student grading imperative. For better or worse, the way students perceive assessment could be the most significant factor influencing their learning (Ramsden, quoted in Nichols, 2003). Gauging student achievement of subject learning outcomes for grading purposes is only one of a number of functions of assessment". (Buchan, McKenzie, Munday, & Morton-Allen, 2005).

Some research has been completed into the use of online assessment for summative assessment purposes (AUTC, 2002b; Hawkes, 1999; Thomas, Price, Paine, & Richards, 2002; Twigg, 2003). Favourable reports have been received from students where computer assessments were a component of continuous assessment throughout the semester and where they had the opportunity to do practice tests online (Clarke, Lindsay, McKenna, & New, 2004; Hopkins, 1998; Peat & Franklin, 2002; Sivapalan & Cregan, 2005).

Researchers have looked at a comparison of the online mode of assessment with the paper and pencil mode (Poggio, Glasnapp, Yang, & Poggio, 2005) and the issues associated with authentication and security in online assessment. There is, however, little (available?) research into the student perceptions of online multiple choice assessment and the scholarly use of the online multiple choice assessment mode as a teaching and learning tool (not simply a diagnostic testing tool) at a *whole-of-institution level* (Bennett, 2002); studies appear to be largely confined to individual disciplines or subjects (Charman & Elmes, n.d.; Peat & Franklin, 2002; Sivapalan & Cregan, 2005; Swann, 2004).

Assessment is recognised as one of the key elements of the teaching and learning process and is used to direct and drive student learning. Keppell and Carless (2006 p.181) note that, “Learning oriented assessment is about putting learning at the centre of assessment and reconfiguring assessment design so that the learning function is emphasized”. The distinction between summative and formative assessment thus becomes less important in the actual conducting of assessment with **all** assessment tasks deemed an integral part of the learning process. The implications of this for planning and supporting online assessment are significant, and it is with this in mind that we focussed on this study.

Approach to the study

The study involved the collection of qualitative and quantitative data around online assessment. It relied heavily on the use of reflective practice amongst the investigators and all participants.

The study was divided into three parts:

- A. Investigation into the use of online multiple choice assessment as an assessment approach. This included the use of broad ranging subject surveys as well the use of individual case studies on specific subjects.
 - i. Staff and student surveys into the use of online multiple choice assessment as a mode of assessment.
 - ii. Investigation into the use by lecturers of OASIS specific items in the Online Evaluation Survey system’s customisable item bank
 - iii. Exploration of individual subject case studies in the use of online assessment.
- B. The use of online multiple choice technology (OASIS) to develop a model of constructive alignment between Learning Objectives and multiple choice questions (Aims 2 and 4).
- C. Tracking the development and upgrade of the software (OASIS) in response to user requirements, using feedback from the study to develop processes and guidelines for socially responsible online assessment leading to the introduction of *CSU Interact*.

Each of these parts will now be covered in turn.

Part A

Investigation into the use of online multiple choice assessment as an assessment approach

Methodology

A i. Staff and student surveys into the use of online multiple choice assessment as a mode of assessment.

1. Staff and student surveys were developed and designed to capture both qualitative and quantitative feedback on online multiple choice assessment with specific feedback on CSU's OASIS tool. Results of the surveys can be found in Appendix 1. The Evaluation Unit provided valuable input into the design of the surveys.
2. Ethics approval was obtained for the study (see Appendix 6).
3. Over a number of academic sessions (Table 1) staff and student surveys were conducted using different online methods. Firstly, using the OASIS program itself to capture data within targeted subject groups. Secondly using an online survey, placed online by DIT. OASIS was used initially as a matter of expediency and being able to target specific groups. The DIT-prepared survey provided the opportunity for broad ranging access to the survey which was needed in order to reach all staff and a wide range of students. It was also thought that using the OASIS program itself to survey people's responses to this particular technology might not get the best results. The Survey Monkey tool was used to put up a survey for a particular subject cohort in 200770, late in the session.

Table 1 Data collection by Session

Year	Session	Student	Staff
2006	Autumn	yes	
	Spring		Yes
2007		yes	

4. The promotion of the student and staff surveys was conducted in a variety of ways:
 - Personal communication with known OASIS and online assessment users
 - Messages via educational designers
 - Messages on What's New & News
 - Promotion to students via their subject Forum (in targeted subjects) with a prepared message provided by the investigator.
 - Individual communication by lecturers with their students in their usual modes of communication (forums, email, class announcements)
5. Data was exported to Excel and collated and analysed (see Results Part A)

A. ii. Investigation into the use by lecturers of OASIS specific items in the Online Evaluation Survey system's (OES) customisable item bank

1. The CSU Evaluation Unit kindly provided quantitative data from five sessions (see Results, Table 2) relating to the use by academic staff of OASIS-specific items from the list of customisable items in the Online Evaluation Survey. Owing to privacy, ethics and workload issues it was not possible within the scope of this study to obtain specific information about student responses to this data for individual subjects.
2. The data was collated and analysed (Table 2).

A. iii. The use of individual subject case studies in the use of online assessment.

Users of online assessment tools such as OASIS and other tools were identified during the course of Janet's daily responsibilities involving online assessment. Working closely with individuals provided the opportunity to find out exactly how people are using OASIS to enhance student learning. Working with these individuals also provided the opportunity for getting student feedback through the prepared surveys. Staff kindly provided case studies to the researchers as exemplars of the use of this mode of assessment.

Results Part A

A i. A full set of staff and student survey results may be found in Appendix 1.

Discussion of results

Part A i.

Staff survey results

A total of 17 staff responded to our official survey. The low response rate was in part due to the timing of distribution of the survey and also limited resources in being able to solicit responses to the survey at that time. It is acknowledged that with such a small sample few generalisable conclusions can be drawn at a University-wide level. However, much of the data is still useful in informing the study about how online multiple choice assessment is being used across the university. There was relatively equal distribution of returns amongst faculties with lower representation in the (then) Faculty of Commerce. 82% of respondents were under the age of 40 with only 18% aged 41-50 and no respondents from 51 years plus.

Respondents used online multiple choice questions in both DE and internal delivery, with slightly more internal use. Amongst the respondents it was more common for this mode of assessment to be used in first and second year levels with less use in third year and a number used online assessment across a number of years. This would be in line with the notion that it is more difficult to service higher order learning skills required of third year through multiple choice questions.

Respondents used online multiple choice assessment for both summative and formative assessment purposes. The number of tasks (individual online quizzes/tests) set for formative assessment varied from one to ten with a slightly higher trend towards a single task. The number of tasks used for summative assessment varied from 1 to 4 with either 1 or four being the most common usage.

The majority of staff (83%) surveyed believed (strongly agree/agree) that the online assessment exercises/tests developed for their students helped them to achieve the subject objectives, [this is not necessarily correlated to the mode of delivery] and 65% of staff found that the majority of students responded positively to use of online multiple choice assessment. The major benefits associated with the delivery of assessment online were identified as: students receive immediate feedback, reduces marking time and it engages students in a different mode of learning. The reduction in costs associated with marking were identified as less important amongst respondents. Although the majority of those surveyed intended to use online multiple choice tasks as part of their assessment methods in future subjects some 25% choose not to use it or were unsure about future use. Reasons for this were not elicited in the study but would be a useful area to explore in consideration for future online assessment tools.

A significant number of the staff surveyed (30%) believed that they did not have enough 'technical support' available to them in setting up the online assessment tasks in their nominated subject/s. This feedback has implications for professional development provided by CELT and DIT in this area, and broader implications for *CSU Interact*.

Respondents used a variety of (technical) support methods to assist students to complete the online assessment tasks. The most popular was the online discussion forum, with others including information in the subject outline, direct contact (email and face to face) information on the CSU website with a small minority using the IT service desk.

Student survey results

A full set of survey results may be found in Appendix 1.

Although there were some 166 respondents to the student survey over a couple of sessions, caution is urged in extrapolating the results of our findings to the broader university population due to the targeted nature of the sample. The student respondents to the survey largely came from targeted subject groups where online assessment had been actively promoted by their lecturer and were mostly based on subjects that used OASIS, not other software. Although the survey questions were designed to elicit information relating to the scholarly use of online assessment, not a review of the software itself, the student responses may have been biased by negative (or otherwise) association with the OASIS application itself (see ECO110). The timing of the surveys may also have influenced the response rate as the investigators were conscious of not 'over-surveying' students and possibly detracting from student response to the standard OES surveys. Delays in getting the survey online in some sessions potentially impacted on the survey returns.

There was a total of 166 survey respondents over two sessions. The majority (83%) were enrolled through distance education. Figure 1 shows the age distribution, and Figure 2 the distribution by faculty, of respondents.

All faculties were represented in the feedback with the Faculty of Education having a lower representation (12.7%) and Science the highest (44%). The majority of respondents were in first year (69.9%).

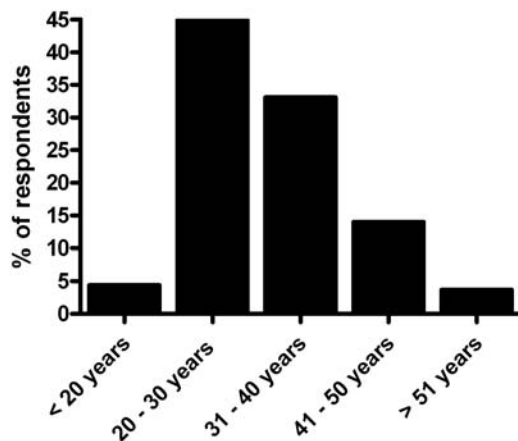


Figure 1 Age distribution of students respondents

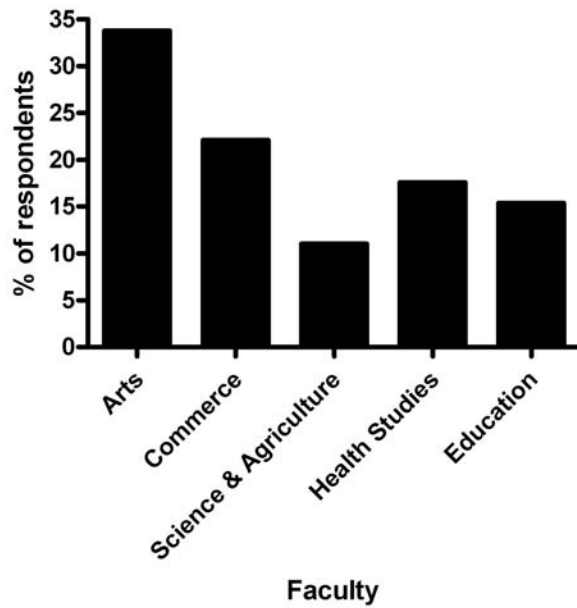


Figure 2 Distribution by faculty of student respondents

Students were asked to rate their personal computer skills (Figure 3). There was no statistically significant difference in self-reported computer skills by Faculty.

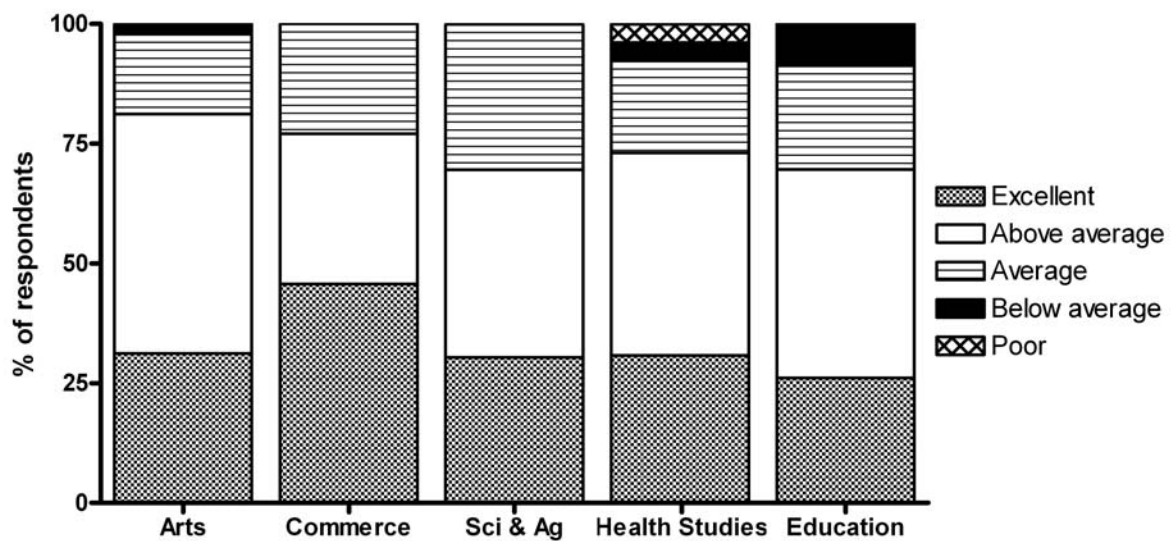


Figure 3. Student rating of their personal computer skills by faculty.

94% of students reported having access to a computer with the internet at home with some 74% accessing most frequently from home, 20% from work and 4% at the university. 8.6% of students reported familiarly with quiz tools from other institutions and 8% reported familiarly with quizzes from textbooks.

A minority of students surveyed were exposed to online assessment in more than one subject (33.7%). Students reported the use of online assessment for summative or formative purposes, or a mixture of both. 91% of respondents agreed that the use of multiple choice questions *per se* was an appropriate way of conducting assessment in their particular subject with only 3.6%

of students disagreeing. 89% of respondents felt that the online assessment exercises helped them to achieve the subject objectives. This compares favourably with staff perceptions where 83% of staff felt that the exercises helped their students achieve the subject objectives. There was general agreement (75%) that the formative assessment exercises were appropriately designed for the level of study.

The pattern of use of formative and summative assessment exercises varied and responses will have been dependent on how the individual exercises were set up in the subject (i.e. how many submissions were in fact allowed for a single test) and by the cohorts responding to the survey. In formative assessment tasks, some 3% of respondents reported not accessing the exercises at all, over 50% accessed between 2-5 times and some 21.7% accessed individual exercise more than 6 times. There was a trend towards use of a single submission only in summative assessment with only 21% of respondents accessing 2-5 times and a minority (2.3%) accessing six times or more.

Students found value in a variety of support methods. These ranged from (in order of decreasing popularity): communication with fellow students, online discussion forum, information on the CSU website information in the subject outline, email to lecturer, IT Service Desk and face to face contact with lecturer. An average of over 55% of students reported using combinations of the above support methods.

A. ii. Investigation into the use by lecturers of OASIS specific items in the Online Evaluation Survey system's (OES) customisable item bank Results

The CSU Evaluation Unit provided quantitative data from five sessions (Table 2) relating to the use by academic staff of OASIS-specific items from the list of customisable items in the Online Evaluation Survey.

A full set of Item bank question usage 2006-2007 is given in Appendix 2.

Table 2 Summary of use of Online Evaluation Survey OASIS specific items from customisable item bank

ITEM	2006 usage*	2007 usage*	Total*
I found that the online assessment exercises available through OASIS helped my learning	37	31	68
I found the online assessment tasks available through OASIS were appropriately designed for this level of study.	10	16	26
The use of online multiple choice assessment (through OASIS) as a formative assessment tool (i.e. primarily as a learning tool) was an appropriate way of conducting assessment for this subject.	13	7	20
The use of online multiple choice assessment (through OASIS) as a summative assessment tool (i.e. counts towards your final grade) was an appropriate way of conducting assessment for this subject.	9	15	21

I found that there was adequate support available to me in completing the online assessment tasks for this subject.	7	4	11
TOTAL	149		

*Each individual figure represents the selection of that item by a subject coordinator as an evaluation question in an individual subject OES. A number of the items may have been chosen in a single subject but this is not reflected in the data.

Discussion of results

The selection of the OASIS-specific questions available as choices in the item bank of customisable questions for the Online Evaluation Survey (OES) indicates that a small number of staff are taking the opportunity to evaluate their teaching practice through the efficacy of the use of online assessment (via OASIS) as an enhancement to learning. The major preference was the choice of the more generic statement ‘I found that the online assessment exercises available through OASIS helped my learning’. Staff did, however, probe the more specific issues around use of online multiple choice for summative and formative assessment and whether the online assessment tasks were appropriately designed for the particular level of study. The comparatively low use of the question ‘I found that there was adequate support available to me in completing the online assessment tasks for this subject’ possibly demonstrates a recognition that this particular item is not directly actionable by the subject coordinator and needs to be reviewed. The use of OASIS-specific item bank questions is limited in that it does not provide the opportunity for those using online assessment software other than OASIS to include reference to that in their OES.

Part A iii. Case studies

Detailed reports of the case studies have been included in **Appendix 4**.

1. BMS121 and BMS 221 Human Bioscience
2. ECO110 Microeconomics
3. ECO210/ECO215
4. PPP103/PPP104 Criminal Justice and society
5. LES101 – Information Literacy in Context, library tutorial
6. Miscellaneous subjects

Part B

The use of online multiple choice technology (OASIS) to develop a model of constructive alignment between Learning Objectives (LOs) and multiple choice questions (MCQs)

The model employs the enhanced statistical functionality of OASIS to introduce and assess the role of *constructive alignment* in the teaching of the School of Commerce distance education subject: ECO110 Microeconomics. As a work in progress, the initial phase of a longitudinal study of cross section data commencing between semester 1 (2006) and semester 1 (2007), the construction of an *error matrix* derived from online tests plays a central role in the constructive alignment of subject learning outcomes to OASIS test performance. The error matrix identifies the failure rate per question in each formative test for all DE students in the cohort. This quantitative information is then analysed to select the *high* failure rate questions for special attention and application of a *constructive alignment pedagogy* in semester 1 of the following year. By such means student feedback derived from the error matrix is informing the content of learning outcomes, Forum based learning tasks and ultimately, improving the structure of online testing.

The model is used to show how constructive alignment was applied to the online subject Forum in ECO110 by relating specially selected commendation questions/learning tasks to those multiple choice questions that the error matrix had identified from the previous semester as high failure rate questions. This approach encourages student participation, peer support and a deeper –rather than surface – attitude to learning which lies at the heart of the constructive alignment pedagogy.

Statistical analysis of the results over two years was presented at a Quantitative Analysis in Tertiary Teaching Conference at Melbourne University in February 2008 (Swann 2008). While the initial results were generally encouraging, the paper concludes that more data is required from semester 1 in 2008 and beyond before definite conclusions can be drawn about the benefits of constructive alignment in online testing for CSU students.

Part C

Initiating and tracking the development and upgrade of the software (OASIS) in response to user requirements, using feedback from the study to develop processes and guidelines for socially responsible online assessment leading to the introduction of *Interact*.

The methodology used to record this part of the study was to review timelines, procedures and specific tasks relating to OASIS.

- During the time period of the study OASIS specialist technology coordinator Janet oversaw the upgrade of the OASIS application functionality of Results reporting to include all responses. This was the direct result of a need identified during the study where OASIS was being used by some staff as a survey tool, but the program's reporting function did not permit the generation of all responses.
- Upgrade of processes of recording and communicating between divisions. As a direct result of the ECO110 'experience' (Buchan & Swann, 2007) a need was identified to provide a centralised system to inform DIT staff of critical dates of use of the server on which OASIS (and a number of other key programs) reside. A communication channel with OASIS users and DIT is now open via the OASIS coordinator.
- The study has identified shortfalls in Customer Services IT Service Desk in responding to OASIS queries and provision of information and guidance to this group. This has had positive results with the adoption of a number of process improvements:
 - As part of the OLE Programme for *Interact* CELT professional development staff have acquired Touchpaper licences to be able to manage (among others) OASIS specific queries. This has seen OASIS become a fully fledged, supported mainstream tool in the CSU Online Learning Environment.
 - The OASIS coordinator trained educational designers and nominated CELT Service Desk staff to manage the common problems.
 - Close liaison with Customer Services has resulted in the improvements in dealing with OASIS issues. Customer Services staff were part of the recent (June 2008) OASIS Refresher training offered to academics, educational designers and divisional staff using OASIS.
- In Autumn 2008 issues arising from the integration of OASIS into *Interact* and consequent change in procedures for selecting OASIS has necessitated further Professional development for educational designers.
- *Interact* related – updating of documentation and guidelines around OASIS writing of [Interact Help guidelines for students](#), development of [Guidelines for staff](#)

- Initiation of the Online Assessment in *Interact* project in CELT (Buchan, Edwards, Faust, & Hardham, 2007).

Conclusion

There is strong evidence of scholarly use of online assessment tools at CSU, in particular the OASIS tool, to enhance learning. The case studies (see Appendix 4) provide evidence of reflective practice amongst staff in relation to the use of online assessment tools to achieve specific learning outcomes and leading to improvements in the development of online assessment tasks for specific purposes. The case studies also identify the ‘champions’ who are pushing the boundaries and working on ways to use technology such as online assessment to improve student outcomes. Staff have demonstrated an interest in evaluating the efficacy of the use of online assessment through their use of the Online Evaluation Survey customisable questions relating to OASIS use, as well as through individual subject specific surveys. There is broad spectrum use by staff of online multiple choice assessment across the University for both formative and summative assessment purposes. There was wide variation in the configuration of tests/quizzes from single to multiple access formative and summative assessment purpose tests along with corresponding student usage of the tests.

Results of the study did not highlight any concerns around equity of online access for students to be able to complete their assessment online, although there is room for improvement in the support mechanisms around online assessment for both staff and students. Of the students surveyed, most agreed that online multiple choice was an appropriate way to assess learning in their specific subjects and that questions were generally appropriately designed for the particular level of study and importantly, that the online assessment task helped them to achieve the subject objectives.

Through an in-depth study a model of constructive alignment between learning objectives and multiple choice questions was developed as part of the research study. While the initial results were generally encouraging more data is required from semester 1 in 2008 and beyond before definite conclusions can be drawn about the benefits of constructive alignment in online assessment.

The intense involvement that the researchers have had with online assessment, and more specifically the CSU software OASIS, (both during and prior to this project), has put them in a strong position to input into improvements to online assessment at CSU. As the University makes improvements to its current system, and looks to the future (Buchan, 2008a) the researchers constantly feed into requests for advice on upgrades to OASIS, user advice around potential new tools (Morton-Allen & Boyd, 2008) and day to day usage of our current tools. In all this, the findings from this lengthy and wide-ranging scholarly research into online assessment (hopefully) keeps education firmly driving the use of technology at CSU.

Publications, reports and presentations from this research

- Buchan, J. & Swann, M. (2008). (In prep.) The Bridge Support Framework for Online Learning Environments: towards managing the digital divide. Poster paper. Association for Learning Technology conference. September 2008, Leeds UK.
- Buchan, J. & Swann, M. (2007) A Bridge too Far or a Bridge to the Future? A case study in online assessment at Charles Sturt University. *Australasian Journal of Online Assessment*, 23(3); 408-434. Accessible from <http://www.ascilite.org.au/ajet/ajet23/buchan.html>.
- Buchan, J. (2008). *Contextualising Online Assessment and ‘quiz tools’ at CSU. A discussion paper prepared for the ILSCOSC*. Albury: Charles Sturt University.

- Buchan, J., Wilkinson, J. & Swann, M. (2008). February. Submission for Carrick (AUTC) citation. “For outstanding contribution to learning oriented, socially responsible assessment through the development of innovative assessment practices, online assessment technology and associated support processes.” (unsuccessful at University level).
- Swann, M. (2008). The role of error matrices in facilitating constructive alignment in online multiple choice questions assessment – the CSU experience. Conference presentation. Quantitative Analysis of Teaching and Learning in Higher Education, Melbourne University. February 2008.

Planned presentations and publications

- Wilkinson & Buchan - Paper for CSU ED Learning & Teaching Conference November 2008. Title TBA.
- Buchan - Poster for Ascilite Conference 2008. Theme ‘Where are you now on the educational technology landscape?’. Title TBA.

Appendix 1 Full results of surveys

Table 3 Student survey results

Student Results					
	Question		Option	Total	%
1	Gender	1	Male	84	50.6%
		2	Female	82	49.4%
2	What age category best describes you?	1	Under 20 years of age	9	5.4%
		2	20 - 30 years of age	66	39.8%
		3	31 - 40 years of age	52	31.3%
		4	41 - 50 years of age	30	18.1%
		5	51 and over years of age	9	5.4%
3	What mode of study are you enrolled in for this subject?	1	Internal / on-campus	28	16.9%
		2	External / distance education	138	83.1%
		3	Tutorial mode		
		4	Other		
4	What faculty are you studying in currently? (your major area of study)	1	Arts	41	24.7%
		2	Business	30	18.1%
		3	Science	74	44.6%
		4	Education	21	12.7%
5	What year level of study are you in currently? This may not correspond to this subject level i.e. a student in their third year at university may be studying a second year subject etc.	1	First year	116	69.9%
		2	Second year	36	21.7%
		3	Third year	10	6.0%
		4	Fourth year or above	4	2.4%
6	Would you describe your computer skills in accessing the Internet, navigating the CSU online system, accessing online study material and corresponding by email as:	1	Excellent	47	28.3%
		2	Above average	74	44.6%
		3	Average	39	23.5%
		4	Below average	5	3.0%
		5	Poor	1	0.6%
7	Do you have access to a computer with the Internet at home?	1	Yes	156	94.0%
		2	No	10	6.0%
8	Where do you most frequently access the Internet?	1	At home	124	74.7%
		2	At work	33	19.9%
		3	At the university	7	4.2%
		4	At a friend's house	1	0.6%
		5	Other	1	0.6%
9	Which of the online multiple choice assessment tools below have you used in studying a subject?	1	CSU's OASIS	150	82.0%

		2	Quiz tools at other institutions e.g. WebCT, Blackboard, Moodle, Janison toolbox etc.	16	8.7%
		3	Multiple choice quizzes associated with a textbook	15	8.2%
		4	Other	1	0.5%
		5	None	1	0.5%
10	How many subjects that you are currently enrolled in use online multiple choice assessment as part of the learning methods in the subject? HINT: please note that where a survey question asks about a nominated, or specific subject this refers to the subject where your lecturer told you about this research study.	1	None	7	4.2%
		2	1 only	103	62.0%
		3	2 only	42	25.3%
		4	3 or more	14	8.4%
11	Select the relevant statement. The online assessment task/s in the nominated subjects is are part of what type of assessment?	1	Summative assessment only i.e. count directly towards the final grade	72	43.4%
		2	Formative assessment only i.e. used for learning, revision etc. but do not count directly towards the final grade	41	24.7%
		3	Both summative and formative assessment	49	29.5%
		4	Unsure	4	2.4%
12	The use of multiple choice questions <i>per se</i> (i.e. both print or online modes) is an appropriate way of conducting some of the assessment in this subject.	1	Strongly agree	72	43.4%
		2	Agree	80	48.2%
		3	Unsure	8	4.8%
		4	Disagree	5	3.0%
		5	Strongly disagree	1	0.6%
13	I found the online multiple choice assessment exercises available as formative assessment in my subject helped me achieve the subject objectives.	1	Strongly agree	45	27.1%
		2	Agree	84	50.6%
		3	Unsure	18	10.8%
		4	Disagree	5	3.0%
		5	Not applicable	14	8.4%
14	I found the online multiple choice assessment exercises available as formative assessment in my subject were appropriately designed for this level of study.	1	Strongly agree	42	25.3%
		2	Agree	84	50.6%
		3	Unsure	19	11.4%
		4	Strongly disagree	4	2.4%
		5	Not applicable (summative assessment only)	17	10.2%

15	The use of online multiple choice assessment as a summative assessment tool (i.e. counts towards your final grade) was an appropriate way of conducting assessment for this subject.	1	Strongly agree	29	22.7%
		2	Agree	53	41.4%
		3	Unsure	12	9.4%
		4	Strongly disagree	10	7.8%
		5	Not applicable (formative assessment only)	24	18.8%
16	I completed all the online formative assessment tasks.	1	Yes	111	66.9%
		2	No	35	21.1%
		3	Not applicable (summative assessment task only in my subject)	20	12.0%
17	How many times did you access each of the formative assessment tasks?	1	Not applicable	23	13.9%
		2	0	5	3.0%
		3	1 only	18	10.8%
		4	2 - 5	84	50.6%
		5	6 or more	36	21.7%
18	How many times did you access each of the summative assessment tasks?	1	Not applicable	29	22.7%
		2	0	5	3.9%
		3	1 only	64	50.0%
		4	2 -2 5	27	21.1%
		5	6 or more	3	2.3%
19	There was adequate technical support available to me in accessing and completing the online assessment tasks in my nominated subject. [Technical support here refers to support that enables you to physically take the test online. It does not include content related support.]	1	Strongly agree	25	15.1%
		2	Agree	70	42.2%
		3	Unsure	29	17.5%
		4	Disagree	18	10.8%
		5	Strongly disagree	24	14.5%
20	Which of the following (technical) support methods do you feel would be most valuable in completing online assessment tasks (part 1):	1	Online discussion Forum	38	28.1%
		2	Information in subject outline	16	11.9%
		3	Email to lecturer	8	5.9%
		4	Face to face contact with lecturer	4	3.0%
		5	Combinations of the above	69	51.1%
21	Which of the following (technical) support methods do you feel would be most valuable in completing the online assessment tasks (part 2):	1	Communication with fellow students (includes online or face to face)	23	17.0%
		2	Information on CSU website	22	16.3%

		3	IT Service Desk	7	5.2%
		3	combinations of the above	83	61.5%

Table 4 Results of Staff Survey

Staff Results					
1	Gender	1	Male	8	47.1%
		2	Female	9	52.9%
2	What age category best describes you?	1	Under 30 years of age	7	41.2%
		2	30 - 40 years of age	7	41.2%
		3	31 - 50 years of age	3	17.6%
		4	over 50 years of age		
3	In what faculty do you currently teach in 2006 (if teaching across faculties, your major area of expertise)	1	Arts	6	35.3%
		2	Business	2	11.8%
		3	Science	5	29.4%
		4	Education	4	23.5%
4	Which of the online multiple assessment tools below have you used? (can include time at other institutions)	1	CSU's OASIS	11	64.7%
		2	Quiz tools at other institutions e.g WebCT, Blackboard, Moodle, Janison toolbox etc.	1	5.9%
		3	Multiple choice quizzes associated with a textbook	1	5.9%
		4	Other	3	17.6%
		5	None	1	5.9%
5	For what mode of study are you using online multiple choice assessment tasks in your subject/s?	1	Internal (on-campus)	6	40.0%
		2	External (distance education)	5	33.3%
		3	Tutorial mode		
		4	Internal and distance education	4	26.7%
		5	Not applicable		
6	For what level/s of study are you currently using (in whole of 2007) online multiple choice assessment?	1	First year	4	23.5%
		2	Second year	4	23.5%
		3	Third year or above	2	11.8%
		4	Across a number of different years	5	29.4%
		5	Not applicable	2	11.8%
7	Check the relevant statement. The online assessment tasks used in my subjects are part of the following type of assessment.	1	Summative assessment only - (i.e. count directly towards the final grade)	7	41.2%
		2	Formative assessment only - (i.e. used for learning, revision etc. but do not count directly towards the final grade)	3	17.6%

		3	Both summative and formative assessment	5	29.4%
		4	Unsure		
		5	Not applicable	2	11.8%
8	In how many subjects are you currently using online multiple choice assessment?	1	Only one	9	52.9%
		2	two	6	35.3%
		3	Three		
		4	More than three		
		5	not applicable	2	11.8%
9	Formative assessment. On average, how many online multiple assessment tasks do you use in your subject/s?	1	One only	4	23.5%
		2	2-5	3	17.6%
		3	6-10	3	17.6%
		4	More than 10	1	5.9%
		5	Not applicable	6	35.3%
10	Summative assessment. How many online choice assessment tasks do you use in your subject?	1	One only	5	29.4%
		2	Two	2	11.8%
		3	Three		
		4	Four or more	6	35.3%
		5	Not applicable	4	23.5%
11	I believe the online assessment exercises/tests developed for my students helped them to achieve the subject objectives.	1	Strongly agree	4	23.5%
		2	Agree	10	58.8%
		3	Disagree	2	11.8%
		4	Strongly disagree		
		5	Not applicable	1	5.9%
12	I found the majority of students responded positively to use of online multiple choice assessment.	1	Strongly agree	4	23.5%
		2	Agree	7	41.2%
		3	Disagree	5	29.4%
		4	Strongly disagree		
		5	Not applicable	1	5.9%
13	I believe that the online multiple choice assessment tasks/tests developed for my subject/s improved student performance	1	Strongly agree	5	29.4%
		2	Agree	7	41.2%
		3	Disagree	3	17.6%
		4	Strongly disagree		
		5	Not applicable	2	11.8%
14	On what evidence/information do you base your response to Questions 12,13 and/or 14 above e.g. Personal feedback from students (email, lectures, forum messages etc.), Monitoring the online assessment test/task results, Students' final grades, Comparing this session with the previous sessions etc.		[Qualitative feedback]		
15	The major benefit/s of assessment delivered online are:	1	Students receive immediate feedback	12	31.6%

		2	Reduces marking time	9	23.7%
		3	Reduces costs associated with marking	5	13.2%
		4	It engages students in a different mode of learning	11	28.9%
		5	Other	1	2.6%
16	Do you plan to use online multiple choice tasks as part of your assessment methods in future subjects?	1	Yes	13	76.5%
		2	No	2	11.8%
		3	Unsure	2	11.8%
17	I plan to modify my online assessment tasks and/or methods as a result of feedback from students (both informal during the teaching session and formal e.g. through this research study)?	1	Strongly agree	1	5.9%
		2	Agree	10	58.8%
		3	Disagree	3	17.6%
		4	Strongly disagree	1	5.9%
		5	Not applicable	2	11.8%
18	If using a CSU online assessment system, do you feel that there was adequate technical support available to you in setting up the online assessment tasks in your nominated subject?		Other (use the Feedback box at the end of the survey to comment further on technical support)	2	11.8%
		1	Strongly agree	5	29.4%
		2	Agree	4	23.5%
		3	Disagree	2	11.8%
		4	Strongly disagree	3	17.6%
		5	Not applicable	1	5.9%
19	Which of the following (technical) support methods did you use to assist your students to complete the online assessment tasks?	1	Online discussion Forum	12	25.5%
		2	Information in subject outline	8	17.0%
		3	Contact with student (email, face to face)	7	14.9%
		4	Information on CSU website	8	17.0%
		5	IT Service Desk	3	6.4%
		6		6	12.8%
		7		3	6.4%
		8	Other (use the Feedback box at the end of the survey to comment further on technical support)		
20	I plan to modify my support processes for my students' online assessment tasks as a result of feedback from this online assessment research study.	1	Yes		
		2	No		
		3	Unsure		

Appendix 2 Online Evaluation Survey (OES) Results

Table 5 OASIS specific item bank questions

ITEM	200619	200640	200649	200670	200679	200703	200740	200749	200770	200779	Total
I found that the online assessment exercises available through OASIS helped my learning	5	14	3	11	4	0	21	0	9	1	68
I found the online assessment tasks available through OASIS were appropriately designed for this level of study.	0	4	2	4	0	0	12	0	4	0	26
The use of online multiple choice assessment (through OASIS) as a formative assessment tool (i.e. primarily as a learning tool) was an appropriate way of conducting assessment for this subject.	1	3	2	5	2	0	6	0	0	1	20
The use of online multiple choice assessment (through OASIS) as a summative assessment tool (i.e. counts towards your final grade) was an appropriate way of conducting assessment for this subject.	0	3	0	6	0	0	9	0	6	0	24
I found that there was adequate support available to me in completing the online assessment tasks for this subject.	0	2	2	3	0	0	2	0	2	0	11
											149

Appendix 3 Visit to Canberra report (extracts)

Report on Research visit to Canberra, 31 August - 1 September 2006

Prepared by Janet Buchan

This is a brief report on a research visit to Canberra, funded (transport only) by our Scholarship in Teaching fund project on online assessment. It highlights some key points of interest from the various meetings and campus visits.

A key reason for the visit was to meet with Peter Donnan at UC to talk online assessment, and to attend the Regional Academic Developers Unit day, which is simply a group of like minded academic developers/educational/instructional designers/ educational technologists (the title differs but the focus is the same). We need to perhaps promote the use of the term Academic Developer within our own unit to be in keeping with accepted 'industry speak'. General consensus is that ours is a very diverse profession and people, in particular organisations, are continually coming to grips with exactly what an academic developer does. This has far-reaching consequences in the organisations and it is clear that academic developer units are seen to be in crisis in many universities. ADU's vary in the structure of the unit, whether centralised, dispersed, whether staff are appointed to academic or general staff and its position within the university.

Thursday 31st August

I visited three universities meeting with educational designers/technologists.

9am – 10.30am UNSW@ADFA

Met with Wanda Jackson and Alan Hermann of Educational Technology Services (ETS) unit.

Academic developer discussion

- UNSW at ADFA are currently in a state of change due to centralised management decisions (Sydney) and the future of ETS and the educational designers/academic developers is unclear. The focus has officially moved away from the academic side and to technical and 'production' support .
- ETS has initiated a Flexible learning team that effectively separate out the educational design from the technology part of the job <http://www.unsw.adfa.edu.au/ets/flexed/Team/team.html> .

.....

Online Assessment

- The WebCT quiz tool is being used at ADFA, no details on how extensively (WebCT does allow the administrator to look at usage stats on a daily basis across all courses)
- Online assessment policy is currently being developed at ADFA@UNSW...

University of Canberra 2.30pm – 4.30pm

Met with members of CELTS at UC, Peter Donnan and Deborah Venness (head of the TEDS team i.e. Teaching & Educational Design Services?).

Peter Donnan is currently completing his Phd in online assessment.

Useful information from Peter:

- Peter successfully got amendments to the university assessment policy made for Online Assessment.
- Links to sites that use online assessment for exams
- Paper on "E-learning assessment: Instructional design pathways" (PhD focus)
- *Discussion paper : procedure for recording assessment and finalising grades at the university of Canberra* (details problems associated with blending and LMS grade book into an existing university grades system)

UC currently use WebCT, and are looking at other systems, including Desire2Learn. We all face similar problems in negotiating the change management necessary to implement any new system, to get the policy & procedures through at the right levels.

TEDS produces multimedia to support DE delivery. Small scale, high end production...

Appendix 4 Full Case Studies

- 1. BMS121 and BMS 221 Human Bioscience** OASIS has been used in these subjects for many years. In these subjects a number of self- assessment tasks were provided to students. These items included digital images of material from laboratory classes (eg dissection material or models) further enabling students to revise material that they have seen in the laboratory and directing their study to key, relevant anatomy. OASIS, and more recently similar tools provided by textbook publishers, remain an integral part of the learning environment of the nursing science subjects and not only provide students with self-assessment exercises but also improve student confidence with respect to their ability to perform in subject examinations. These online topic review sheets, or laboratory revision exercises, enable students to gain immediate feedback on their understanding of topic material. A side benefit of this has been a greater focus on the development of questions which test higher order cognitive skills (e.g. student understanding rather than simple recall). The use of online tools has allowed for greater flexibility for students – students are able to access these tools from their home or other off-campus sites. This is a significant benefit for students studying by distance education and for on-campus students who for a range of reasons (e.g. conflicting work or family commitments) spend only minimal time physically on-campus. (J. Wilkinson)
- 2. ECO110 Microeconomics** used a combination of four formative tests and one summative test as the approach to online testing for a large cohort DE subject. Students could take the formative test several times each session using the feedback as a learning tool to prepare them for the single summative test taken in early June each Autumn session. This pedagogical approach to online assessment using (OASIS) over several years led to the constructive alignment model discussed above. (M. Swann)
- 3. ECO210/ECO215** In Spring sessions each year, (OASIS) was adapted for use by much smaller second/third year DE student cohorts. In the two B.Bus. undergraduate subjects ECO210 Labour Economics and ECO215 Managerial Economics for Business Strategy, online assessment was employed in a different way to the first year subject ECO110. In ECO210/ECO215 only two formative tests were available for students while one summative test was employed late in the Spring session. The test questions were constructed around a more problem solving approach relying on data sets and formulae as required. Given that the students were at the senior undergraduate level, the (OASIS) tests were open book format. Student response was generally positive and the subject Forum was used to provide immediate solution sets after the submission of the summative test. (M.Swann)
- 4. PPP103 and PPP104** Criminal Justice and society. Students are introduced to online assessment with a single OASIS test in their first session subject, PPP103. In their second session of study three online multiple choice tests are provided for formative assessment purposes. The first is a relatively straightforward revision test to prepare for the mid-session exam. The mid-session exam is written (hard copy) at residential school. Once the exam has been marked, the lecturer makes an online version of the exam available through OASIS. This gives students the opportunity to review the exam as many times as they wish and to learn from their mistakes. The third test is a revision test for students to revise and prepare for the final exam. There is always a particularly positive response to the provision of more difficult questions. Anecdotally it appears that those students (over 50%) who do take the time to review and learn from the exam are successful in the subject overall. The use of online

assessment in this subject is viewed positively in the student online evaluation surveys. (B. Guy)

5. LES101 – Introduction to Leisure and Health

The extract below is taken from the report by the Library (Fry, 2006) on the use of online assessment in LES101. This model has since been adapted by the Library for use in a number of other subjects and in 2008 the Library staff were working with at least 10 subjects to develop integrated Library tutorials with OASIS as the assessment tool.

“An alternative model for delivery of an online library tutorial was developed in October-November 2005 by Greg Fry and Jula Ryder, with assistance from Janet Buchan (CELT) using content from selected *SmartSkills* modules and online multiple choice assessment via OASIS. The tutorial was designed to:

- (a) be easily customised for other subjects
- (b) use previously developed information literacy materials (i.e. *SmartSkills*), and
- (c) use online multiple choice assessment to replace marking by library staff.

The use of online multiple choice assessment tools such as OASIS provides the timely feedback on information literacy skills required for formative assessment (Buchanan 2006) and overcomes the constraints associated with marking assessment items for large numbers of students. Well constructed multiple choice questions can be used to assess the learning outcomes of the information literacy tutorial (Kearns & Hybyl 2005; Shank 2006a). Shank (2006a, 2006b) provided useful guidelines on the development of effective multiple choice questions.

A trial of the new tutorial was conducted in Autumn Semester 2006 in LES101 Introduction to Leisure and Health; Subject Coordinator: Marie Macklin, School of Community Health

https://online.csu.edu.au/Inter/Action?type=S&cmd=LES101_200640_x_xi.htm

LES101 is a DE subject taught from the Albury-Wodonga campus, and typically has a large proportion of mature age students, many of whom are returning to study and have limited IT skills. There are also a small number of internal students who select this subject as an elective. The Autumn 2006 session had a total enrolment of 52 students.

The online library tutorial was available from the start of the semester. The OASIS quiz was to be available from 13 March-24 April, but was not available to students until 16 March. There was a problem with the link to OASIS in the online subject which had to be fixed by the Educational Designer. The tutorial was worth 5% of the total mark for the subject, but was not compulsory. This is the first time an online library tutorial had been included in this subject.” (Fry, 2006)

6. Miscellaneous use of online assessment in subjects

The use of online multiple choice assessment is widespread at CSU. A brief summary of some of the uses is included here.

- It has been used in the Health Sciences in Podiatry (internal delivery) to provide students with self-assessment tasks that link to high resolution images and to enable students to revise key graphics of diseases with which they need to become familiar. One limitation identified in the use of online assessment here is the copyright issue associated with having access to images that can be freely shared online.
- A suite of journalism subjects has used online assessment for over ten years to provide students with access to self-assessment tasks (grammar and language exercises) that have been integrated into the online study materials. The subjects

share common exercises. A design issue that has been identified is the embedding in online materials of links to an older version of the software, making it harder to update the material and provide correct links for students. This has informed future design of subjects using OASIS and other online tools.

- Accountancy and commerce – there is widespread use of online multiple choice assessment in a number of accountancy and commerce subjects with usage ranging from multiple short topic quizzes (formative assessment) to three to four short summative assessment tasks. The latter are made available for a few days at a time with students required to get a certain minimum score in order to pass. Subjects offered cross-campus have been able to use the same assessment tasks through giving relevant student cohorts access to the test group. Issues associated with security around this type of assessment needed to be carefully worked through.
- Online multiple choice tests have been successfully used in Policing courses to provide students with opportunity to prepare students for exams and to enable them to review and learn from their exam experience.

Appendix 5 Budget

The project has come in well under budget. Although the project catered for marking release, there were problems in finding people to provide marking for Jenny and Michael which led to some delays in finalising the report and may impact on publications. It was also not possible to provide time release for Janet in her role which had changed from the educational design role (which is easier to support) when the project was first established. Using research assistants to provide support around data analysis and literature review work was the most expedient use of the funds.

Online Assessment - Scholarship in Teaching project. BUDGET				
Date	Item	Income	expenditure	total
Jul-06	SIT	10,000		10,000
	Linda Ward research asst.		821.74	9,178
31 Aug-3 Sept. 06	Travel to Canberra		231	8,947
Nov-07	Swann marking		1980.4	6,967
26.11.07	Travel to WW - Janet		209	6,758
12.02.08	Research asst.- Michael Stephenson		544.34	6,213
3.06.08	Travel to WW - Janet		124	6,089
Jul-08	Research asst.- Michael Stephenson		542.52	5,546
Aug-08	Poster - ALT-C conference		30	
Oct-08	Posters CSU Ed & Ascilite 2008		60	
			TOTAL 4543	5457

Appendix 6 Ethics Approval

From: Hicks, Julie
Sent: Tuesday, 28 March 2006 10:38 AM
To: Buchan, Janet
Subject: RE: Ethics application progress

Dear Janet,

Thanks for the quick response I am pleased to advise that your research entitled “:Education driving technology: An investigation into the use and effectiveness of online assessment as a method to support learning and teaching” has been approved. Protocol Number 2006/066. I will forward a letter today confirming approval.

Hope all goes well with the research.

Cheers Julie

Julie Hicks

Administrative Officer
 Department of the Academic Secretary
 Charles Sturt University
 Panorama Ave
 Bathurst 2795
 Ph: 02 633 84628
 Fax: 02 633 84194

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