Survey report on the use of e-learning tools for formative essay-type assessment

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Contents

1 Introduction

The marking of essays and especially the provision of high quality feedback are of the highest importance for teaching and learning. Indeed, good feedback is fundamental to help students learn (Black and Wiliam, 1998; Hattie, 1999). However the use of electronic tools to assist lecturers provide feedback and help manage the process is still relatively rare in New Zealand tertiary education.

At the Massey University Vice Chancellor' Symposium in 2005 on best practise in distance education the keynote speaker at the symposium, Professor Michael G. Moore, Education, Pennsylvania State University, USA, emphasised the need for a feedback loop from assessment into teaching. Lecturers need to evaluate and learn from the assessment of their students' work to be able to improve the quality of their teaching. To facilitate this feedback loop, lecturers must be given tools that support gaining knowledge from marking feedback, especially if markers are employed. This issue illustrates one of the many areas where, although educational theory on assessment is well established, the transition into practise has not taken place. E-learning can help with this transition.

The aim of the survey was to explore current marking practice where lecturers use electronic tools to help them mark and manage assignments. The emphasis was both on the use of electronic tools and good practice. The survey identified staff attitudes, experiences and perceived barriers towards e-learning for formative assessment. This provides a picture of the current status of e-learning for formative assessment and reasons why lecturers use these approaches. The survey was conducted via semi-structured interviews.

The survey has informed recommendations for e-learning supported formative assessment. These recommendations include profiles and case studies that are applicable both at institutional and individual teacher/academic level, and lead towards the increased uptake of formative assessment. Specific emphasis is on e-learning tools and techniques to support such uptake. The recommendations are in reports, available at http://etools.massey.ac.nz/research.htm.

1.1 Report structure

Section 2 outlines the interview selection process and provides an overview of the characteristics of the interviewees, including some comparison to national data. A brief overview on analysis directions is given.

Section 3 focuses on the analysis of the interview data guided by four main themes, motivation of lecturer, benefits, needs of lecturer and educational aspects. An outline on how participants make use of electronic tools to help with assignments is also presented. The interview questions are provided in Appendix A and summary of the interview data by question is given in Appendix C.

Section 4 presents further analysis of the interview data with a focus on the key 'issues' of the assignment process. These issues are defined and the methodology for analysis by issue is outlined. The practices and tools employed by the interviewees in their assignment processes are investigated as is the prevalence of the various technologies as factors influencing the lecturers' choices. Appendix D contains the checklist used during this analysis step.

Section 5 provides the conclusion of the survey analysis.

2 Survey Procedures

The survey was conducted using semi-structured interviews. The following sections describe interviewee selection procedures and composition and introduce the directions for the interview analysis.

2.1 Interviewee selection

The survey interviewed staff who use electronic tools to help receive, mark or return assignments. The sampling strategy was purposive. The selection deliberately looked for staff using electronic tools for the marking and management of assignments. The aim was to discuss a diversity of assignments and educational contexts covering a range of class sizes, subjects, and educational levels. Key contacts at each institution selected staff they judged to best fit the sample criteria.

The key contacts identified staff by their knowledge of the institution or by talking to others who knew about e-learning activities at the institution. In one institution electronic tool use for assignments had been surveyed earlier and staff identified in this survey were approached (Heinrich, Milne and Ramsay (2007) and http://www-ist.massey.ac.nz/marktool for details on this survey).

The staff targeted for the interviews were lecturers who use some aspect of electronic tools to help with: the learner submission of assignments, the preparation and marking, return of marked assignments, the interaction of students after the marking, and the checking of plagiarism. Lecturers who were course co-ordinators or academic teaching staff were targeted. Tutors with a core role in a course were included in the sample. A few individuals who are not currently teaching themselves but have closely related roles or highly relevant previous experience were added to the sample. The final sample selection was based on the desire to ensure diversity of assignments and educational contexts, with a range of class sizes, subjects, and educational levels, e.g. diploma, undergraduate and postgraduate courses.

2.2 Interview procedure

The interviews with the lectures focused on ‘essay-type’ assignments. Essay-type assignment refers to course work where learners have freedom in how they construct

their response and that require human attention and judgement in assessment for grades and for providing feedback. Some examples of essay-type assessments are essays, design projects, spreadsheets, programming projects, or reports with free text, diagrams, calculations or drawings. Section 2.5 of the literature report written for this project (available at http://etools.massey.ac.nz/research.htm) provides a definition of essay-type assessment. The lecturers targeted use electronic tools to help with aspects of essay-type assessment.

After several iterations of review the interview questions were tested in four pilot interviews. An observer helped refine the interviewing technique. The questions in the pilot interviews worked well and did not require further adjustment.

One person conducted all of the interviews. Most were face-to-face but some did occur by telephone. The interview duration averaged about forty minutes and an interview rarely went longer than an hour. The interviews were semi-structured and guided by the questions provided in Appendix A. The questions asked about the context of the assessment, the use of e-tools, views on advantages and disadvantages of tool use, and factors determining tool use. Information was collected on demographics such as years of teaching, class size, level of degree, subject (based on New Zealand standard classification of education (Ministry of Education, 2007)), course type (campus or distance), and institution (Appendix A for details). The interviewee was given the questions before the interview.

The interviews were recorded, transcribed and the transcript checked by the researchers and then sent to the participants for verification and permission to use in the project. Participants were permitted to make changes. Any changes were minor, mostly correcting errors in transcription and occasionally providing further clarification. One participant did not want to be recorded so notes were taken instead. The project team followed the Massey University human ethics procedures for the design, analysis and reporting of the survey. A full ethics application was filed and approved (reference HEC: Southern A Application 06/47).

Summary of the interview process:

1. Identify sample by talking to key contacts. These are people who know about e-learning in the organisation. The key contacts were informed about the sample criteria and asked to identify potential interviewees.

2. Email or phone potential interviewees to determine their willingness to participate and check whether they are within the target population.
3. Filter the responses into those to be interviewed and those who fall outside the target range.
4. Identify a suitable interview time and send participants the information sheet, consent form and interview questions.
5. Interview occurs.
6. Transcribe interview recordings, check transcript and verify with participant.
7. Analysis of results and writing of report.

2.3 Characteristics of sample

Ninety staff participated in semi-structured interviews that occurred at three universities and two polytechnics. More university staff (66) than polytechnic staff (24) were interviewed. This was largely due to the composition of the project team with members of this team providing access to potential interviewees. There was also greater diversity of approaches found in the university sector which required a wider sample. Most of those interviewed were academic staff who taught or co-ordinated courses. Six interviewees did not teach but had direct roles in the support of teaching such as senior managers, programme managers or e-learning managers.

The sample contained a majority of male participants at 57%. This is close to the figure of 52% of men in academic staff in the New Zealand tertiary sector (OECD, 2006).

The participants were predominately experienced lecturers. About half of the sample had taught in tertiary education for more than ten years, 40% had taught between 3 and 10 years, while less than 10% had taught less than three years.

The courses participants discussed, were an even mix of campus based and distance courses. 40% of courses were campus based, 40% distance and the remaining 20% were either both campus based and distance or the participant discussed both modes using different course examples.

Subject area	Percentage of staff interviewed	Percentage of students[1]
Management / Business	29	23
Information technology / Information systems	26	4
Education	11	7
Humanities, Social Sciences, Arts	10	18
Health Sciences	9	9
Sciences	8	9
Creative Arts	4	5
Engineering, Food, Architecture, Building, Mixed field programmes	0	25
Not aligned to one faculty	3	n.a.

[1] Figures from the Ministry of Education (2006)

Table 2.1: The subject area of the interviewees compared to the percentage of students in tertiary education.

The subject area of those interviewed was compared to the percentage of students attending tertiary education in 2005 in these subject areas (Table 2.1). The sample of staff interviewed broadly maps the percentage of students with some notable exceptions. A disproportionate number of information technology staff were interviewed. Staff from this area are more likely to have the motivation and skills to realise the benefits of technology. Less staff from the social sciences, humanities and the arts were interviewed. This suggests that there may be less activity in using technology to assist with assessment in these subjects. Some areas such as engineering, food technology, architecture, building and mixed field programmes were not covered. Mixed field courses are often foundation-related programmes such as literacy and numeracy, employment and life skills training and as such less represented at university level.

There was a spread of class sizes with a cluster of courses falling into the 11-40 category (Table 2.2).

The survey did not collect data on the extent of the use of electronic tools in the tertiary sector overall, but it can be assumed that this use is relatively low. The key contacts did report that it was not always easy to find people who use tools beyond a superficial level to help them mark or manage assignments. A previous survey at one of the participating organisations revealed a low usage of electronic tools (Heinrich,

Milne and Ramsay, 2007 and http://www-ist.massey.ac.nz/marktool). This indicates that paper-based systems for submission, marking and return of assignments are the norm for most staff. The sample selected for this work is currently a minority group in tertiary education.

Class size	Total
Less than 10	8
11 to 40	35
41 to 100	20
More than 101	18
Not applicable or data not collected	9
Grand Total	90

Table 2.2: The size of classes that lecturers discussed.

2.4 Data analysis directions

The interview data were analysed according to themes. These themes explored concepts like motivation and benefits for lecturers and linkages to educational theories. This analysis is described in detail in Section 3.

To provide a different perspective on the data a further analysis, focussing on issues, was conducted. The issues were based on the sequence of steps common in dealing with assignments. Details on this analysis are available in Section 4.

Both the analysis by themes and by issues examined the interview transcript. The quantitative data collected at the end of each interview were collated and have been provided in Section 2.3. These quantitative data on interviewee characteristics were used for cross-tabulation in the issues analysis and Section 4 contains the resulting information.

3 Analysis by themes

This section presents the analysis by themes. It starts by outlining the analysis methods employed before presenting the analysis findings.

3.1 Analysis method

3.1.1 Familiarisation with interview data

The researchers proofread the interview transcripts as they became available and wrote brief summaries of the key points made in each interview. This work provided a basic familiarisation with all interview data.

The data analysis was performed using the qualitative analysis software NVivo. The transcripts were entered along with links to supplementary information such as articles the participants had identified as relevant. The interview summaries were entered into NVivo as was the literature review done earlier in the project. This facilitated the later coding of the literature review for concepts from the education literature and a comparison with participants' comments.

The transcripts were coded by question number to allow sections of different transcripts to be grouped together. This occurred largely automatically via auto-coding, followed by a manual process that coded for any overlapping content that the auto-coding had missed.

To gain an initial understanding of the interview data the first ten available transcripts were summarised on question level. Supported by NVivo various coding schemes and directions were explored. During a one day workshop assisted by a qualitative analysis coach the project team reviewed the preliminary results and brainstormed further coding directions. Appendix B shows the analysis directions that were explored. Out of this work the themes for the main analysis evolved.

3.1.2 Analysis themes

The following four main analysis themes and sub-themes were selected:

- Motivation of lecturer: institutional criteria, benefits for students, pedagogy, productivity gains, preventing plagiarism, tools being a necessity or reasons for using a specific tool;
- Benefits: administration, reducing geographic limitations, time and resource savings, group facilitation, archive, plagiarism and other issues;
- Needs of lecturer: general needs of lecturer, specific needs of the lecturer, technology needs and student needs;
- Educational aspects of feedback: clarify goals and criteria, self assessment, feedback, dialogue, motivation, close the gap, shaping teaching, validity.

The analysis on educational aspects of feedback was guided by Nicol and Macfarlane-Dick's work on the seven principles of good feedback (2006) and the need for validity of assessment. Table 3.1 indicates the thoughts on practice that guided the work with the interview transcripts.

The outcomes of the analysis for four main themes had to be put into context. The benefits as seen by the interviewees were investigated and related to their motivation for applying tools. Benefits and motivation should be balanced with needs, like the requirements for support. These themes need to be viewed within the educational aspects of feedback. The drive for this analysis direction was to be able to showcase advantages stemming from the use of e-tools for essay-type assessment and to identify the support structure required by academics.

A matrix was constructed to ascertain to what degree each of the seven interview questions asked contributed to the four themes. The data show a large overlap between interview questions and analysis themes. All questions have contributed strongly to the analysis. This indicates that the answers to all questions have been included in the analysis. The themes have been developed with contributions from all questions, suggesting that these themes cover aspects of importance to the interviewed lecturers.

Besides coding for the four themes as described in this section the researchers noted any emerging issues and coded for these accordingly.

Principles	Thoughts on practice
Clarify goals and criteria Helps clarify what good performance is such as goals, criteria, and standards.	This could include discussion to clarify goals and the use of marking criteria or scoring rubrics.
Self assessment Facilitates the development of self-assessment and reflection in learning.	Do the lecturers discuss how they help students self assess or peer assess?
Feedback Delivers high quality information to students about their learning.	Does the feedback to students discuss strengths, weaknesses, and direction for future learning? Timing of feedback may be linked to quality.
Dialogue Encourages teacher and peer dialogue around learning.	What discussion does the learner have with teacher and others about the assignment?
Motivation of students Encourages positive motivational beliefs and self esteem.	What do the lecturers say about student motivation?
Close the gap Provides opportunities to close the gap between current and desired performance.	What opportunities do the students have to act on feedback?
Shaping teaching Provides information to teachers that can be used to help shape teaching.	Do lecturers analyse on class level and feed back into teaching?
Validity The extent to which the assessment fulfils its intended purpose. This can include planning, implementing and reviewing assessment procedures. Validity is an overarching issue and encompasses narrower issues such as the reliability and fairness of the procedures.	Do lecturers discuss choosing the most suitable form of assessment for the targeted learning outcomes?

Table 3.1: Further detail for the theme ‘educational aspects of feedback’

3.1.3 Selection of a subset of interview transcripts

As described earlier, the initial steps of data exploration were conducted looking at the first ten available transcripts. The development of the theme-based coding scheme started with work on these transcripts. This selection was then extended twice by a further ten transcripts each. These additional transcripts were chosen based on the following four criteria:

- Well defined need matched by the use of technology: The needs of the students and the course were being met by the technological innovation employed. An important point was that there was good use of e-learning tools.
- Good feedback and assessment practice: Evidence that the lecturer was adhering to pedagogical principles or the seven principles of good feedback practice outlined by Nicol and Macfarlane-Dick's (2006).
- Evidence of innovation in the area of using e-learning tools for assessment: For example, if the lecturer had created their own system to meet the needs of the students.
- Clear interview that added something new: A comparison of interviews on the range of tools and lecturers from different institutions helped the selection process.

Two researchers independently identified the interviews that meet the criteria and then compared lists and agreed on a set. The researchers' selection had on overlap of 15 interviews. The remaining selection was discussed to gain agreement.

This set of thirty transcripts formed the basis for much of the analysis. However searches of all ninety interviews provided data to verify findings. This set could easily have been expanded as many participants displayed good practice. Some of the interviews discussed very similar systems so there was some duplication in the full set that was avoided in the subset of thirty.

3.1.4 Analysis outputs

The main description of findings based on the analysis of themes is provided in Section 3.2. In addition to the analysis by themes the interviewee responses were summarised by question number. This report by question number is available in Appendix C.

3.2 Findings and discussion

3.2.1 Benefits of using e-learning tools

This section describes the analysis for the theme 'benefit of using e-learning tools in providing feedback to students'. A range of benefits to both students and lecturers

emerged. The benefit that was referred to most often was e-learning tools assisting in administration issues. Following behind this, time and resource saving were identified as major benefits, in addition to facilitating group activity, the removal of geographic limitations, improving the quality of marking and feedback, and having an archive of student work. These benefits are discussed below.

3.2.1.1 Administration benefits

A practical benefit of using e-learning tools mentioned most often by the lecturers was reducing effort and time they spent on administration. Lecturers emphasised the advantage that e-learning tools provide in managing assignments. Assignments can be received electronically from each student, making it easier to file and organise submissions for marking purposes than with paper assignments. Also, lecturers noted that conducting communication online meant that all communication with a particular student could be recorded, meaning that feedback could be geared to a particular student's needs. One lecturer commented that online communication meant it was easier to track student progress and it saved having to learn student's faces as only names had to be learned when teaching online. However, the benefit mentioned most often was the ability to keep track of student assignments, as highlighted in the extract below:

R46: one of the reasons I really started to do this was because with distance papers I felt a little bit like the Harry Potter movie when the letters [arrived] and [were] flying everywhere and I felt that I had essays coming under the door, I had essays in my mailbox, essays by post, essays on the computer, essays on digital, and it was everywhere and I just thought right submit them digitally and now it's just via the digital drop box.

Plimmer and Mason (2006) and Edwards and colleagues (2002), noted that e-learning tools provide ease of collection and efficient return of assignments. Similarly, lecturers identified that setting assignment due dates at convenient times for students and lecturers alike, and being able to check if assignments were handed in on time were particular advantages of using e-learning tools.

Efficient return of student assignments was another advantage discussed by lecturers. This was of particular benefit to extramural students, as it avoided them having to

wait for long periods of time to receive their marks and feedback by post, as described in the extract below:

R55: the advantage for the student, and to some extent for you, is that it's going back much more quickly. Obviously, once you've finished the marking, you click the appropriate box on Blackboard and they've got access to their marks. Whereas, particularly for distance students, it may be a week or more from the time that I hand over the paper assignments to the office to be sent back and the time they actually arrive in the mailboxes. So that's obviously an advantage for the student.

Finally, a number of lecturers suggested that using electronic submission of assignments was a particular advantage over handing in assignments in paper form, as it prevents assignments from being lost. This is a significant benefit that was also noted by Plimmer and Mason (2006) and Edwards and colleagues (2002) and is highlighted in the extract below:

R25: They won't get lost, documents won't be put into some cubby hole that somebody else has picked up by accident, because they are there. So that helps and it also means that even if my hard drive is wiped at home, even if my house burnt down, sitting at [work] is their submitted assignment, so there is no way that I can accidentally lose it.

3.2.1.2 Time and resource saving

Previous literature identified saving time and resources as a benefit of using e-learning tools (Plimmer & Mason, 2006; Edwards et al., 2002). This is a benefit that was also strongly identified by lecturers in the current study. Time saving related to a number of factors for both students and lecturers alike, including saving time waiting for assignments and returning assignments to students, saving time by typing comments instead of handwriting them, the ability to copy and paste similar comments rather than writing them out each time, and giving students the option to hand in assignments up to the last minute online. Some lecturers commented that giving feedback online saved time, for example:

R46: It's easy to keep track of. I find it much quicker - it's just so much easier. You can write more comments as well because sometimes when you're writing with

pen it just seems to take forever but you're so used to doing it you just put on the comments.

Some lecturers commented that using e-learning tools to give feedback to students was more time consuming than giving handwritten feedback, but had their own benefits such as being clearer to read and faster for the students to access.

Other benefits that were frequently mentioned were saving students the cost of printing assignments. In addition to this, dealing with assignments in electronic form had the benefit of being more environmentally friendly by saving paper, as identified in the extract below:

R51: It's far more convenient for them, it saves on expense, it's much better for the environment. Electrons cost a lot less to the environment than paper.

3.2.1.3 Group facilitation

Freeman and McKenzie (2002) advocate for the use of web-based systems to improve students' learning of team working skills. They state that such systems reduce problems with teamwork, especially in the context of large classes. This point was supported by the comments of lecturers, who indicated that group collaboration was made possible online. For example, students were able to work on group assignments, submit assignments and receive feedback and marks online. This was of particular benefit to distance students who lived in different locations:

R55: Students created a website and used the Blackboard Wiki tool for that, as a group project. So four or five students would work together ... and it is quite a good exercise in that it can bring students together. In some cases it is actually distance students at different locations working together, or even on-campus students working with the distance students, it can sometimes bring together students who have common interests but are separated geographically. One year I had students working on an energy information website, and there was one in Auckland, one in Taranaki, and one in Wellington, and they all worked in libraries that had an energy orientation. Yes, so things that support collaboration I think are quite valuable, and that's where Wikis are quite handy.

It was noted that e-learning tools also facilitated lecturers and markers working collaboratively online to mark assignments. E-learning tools also provide students

with the opportunity to self assess and peer assess, which lecturers identified as providing formative learning opportunities for students.

The use of bulletin boards and discussion forums was also identified as a way to engage and involve students. Encouraging students to engage in these forums was identified as a benefit to student learning as it meant that they could ask questions and receive answers and feedback and discuss issues with other students.

3.2.1.4 Reducing geographic limitations

Reducing geographic limitations was another benefit commonly cited by the lecturers interviewed, which is a point also noted in previous literature (Plimmer & Mason, 2006; Edwards et al., 2002). Online tools give students the flexibility to submit assignments at any time and from any location they choose to. In addition to this, online assignments give lecturers the flexibility to mark assignments from any location where they have access to a computer. However, for some lecturers who did not have access to a laptop or a computer at home, this meant that the locations they could mark in were relatively limited.

Removing the limitations associated with distance learning was a particular advantage for distance students who live in different cities or countries, but can fully participate in a course and submit and receive assignments without having to wait for the post, and also communicate and gain feedback from the lecturer as well as other students. This is illustrated in an interview with a lecturer running the same creative writing course as mentioned above, in which students use a Writers Cafe to submit their work and receive peer reviews from other students around the country:

R36: But the great advantage, well I mean they get the reviews from their peers which is great but the other thing is that they feel like they are part of a community and that was a really big issue for me when I was setting up creative writing courses. All these people were spread all over the country and maybe sitting in a little town in the middle of nowhere with nobody else and I wanted them to feel like they were part of the writing community, and I think that has been achieved.

3.2.1.5 Archiving student assignments

Plimmer and Mason (2006) and Edwards et al. (2002) both noted the benefit of storing artefacts of student assignments for the future. Lecturers also noted the benefit of using an online tool to receive assignments, as assignments could be referred back to later in the course, and an archive could be made of assignments from past years for later referral. This had the advantage of providing formative based assessment when marking assignments, as having an archive of a students' past assignments meant common mistakes could be noted or comments on similarities in assignments. In addition to this, lecturers noted the benefit for students of being able to access the marks for their course online easily at any time. However, one of the limitations of this system noted was that this archive was not available to students once they had finished the course, therefore if they had not saved their assignment and feedback in a separate file they could not access this feedback once the course had finished.

Another benefit of e-learning tools is the ability to store common information so all students have access to the same information, and distance students are not disadvantaged. Having an archive of student work also meant that more insight could be given into student understanding. For one particular case study assignment, a lecturer described the benefit of being able to track what files students have accessed, what paths they took, the mistakes made and the time that it took a student to fill out a report.

In addition to this, students have the opportunity to log in and out of work that they may be submitting and have a number of attempts at completing it, and the lecturer will wait until the due date and then mark the most recent assignment, as described below:

R19: They can upload and download them until they're happy with them. But providing the students this flexibility has limitations - for example, we can't start marking until the actual close date because teaching staff actually can't access the student's environment to start marking early so there's a few limitations but that seems to work very well. It certainly stops the number of emails I get about "I've thought of something else I should have done please can I have my assignment back".

3.2.1.6 Quality of marking and feedback

Another benefit of using e-learning tools noted by lecturers was improved quality of marking and feedback. A number of lecturers emphasised that using online tools allowed for the provision of more feedback that was more detailed. In some large classes, the use of e-learning tools facilitated the provision of feedback where none would have been given in the past as it would take too long. In addition to this, the use of some online tools facilitated a more reliable and transparent system and allowed lecturers to feel more confident in their marking and assessment processes.

Previous literature has pointed to the opportunities for anonymous participation and marking that arises from e-assessment approaches (Davies, 2002; Downton, 2006; Edwards, Fernandez, Milionis, & Williamson, 2002). Student identities can be stored in a database and the artefact that the marker sees can be kept anonymous, a point that some lecturers from a number of interviews noted, as illustrated in the extract below:

R51: So first it's submitted electronically, then I download those, I clean the file of all identifying information, they're by identification number only. Nothing in file information or anywhere within the body, to identify who it was. The ones where that criterion was already met, I feel that I can mark, but given the number of assignments I allocate some of them to my two tutors, and any one where there has been an indication of who actually wrote it, a real name or a student email address which gives away the name, after cleaning those I allocate those to the tutors to mark.

One practical issue that was identified related to the readability of handwritten comments. Students have difficulties in deciphering the handwritten comments put on their work (Blayney & Freeman, 2004; Bridge & Appleyard, 2005; Higgins, Hartley, & Skelton, 2002). However, electronic feedback provides clear and legible feedback as compared to handwritten comments. Therefore, for lecturers with poor handwriting, the use of electronic feedback ensured that feedback was clear and students could read the feedback written on their assignments. This is illustrated in the extract below:

R55: Against that, the other thing is that when I write comments, obviously because I'm typing they're probably more readable to the student, than if they were getting written comments, and that's one of the things students comment on.

3.2.1.7 Plagiarism

Finally, one other major benefit of using e-learning tools to mark assignments from the lecturer's perspective is the ability to quickly screen for plagiarism. This could be done either by using plagiarism detection software or by checking online links that may be referred to, or checking for plagiarism by entering phrases into a Google search or searching other assignments, as described in the extract below:

R25: Because it is digital it does mean that I can check for things like plagiarism if I want to because I can highlight the text and go and see if I can find it somewhere else if I have any doubts, which is really hard to do on a piece of paper, comparing phrases. Where they have got things like references to links and things like that, I can just click on them and go and have a look, so because it is a digital document it makes it a lot easier to do that.

3.2.2 Motivation for using e-learning tools

Lecturer motivation for using e-learning tools that arose from the interview data were divided into five common motivations, including the influence of institutional criteria, benefit to students, productivity gains, preventing plagiarism, and reasons specific to a tool.

3.2.2.1 Institutional criteria

One of the overwhelming motivational factors for using e-learning tools for assessment were based on institutional criteria. A common theme that emerged from the interviews was that lecturers were motivated to use the learning management system the university supported. A number of lecturers suggested they were 'forced' or had little choice but to use the system supported by the university, and there were no options for using alternative systems. On one hand, this was described as a form of protection for lecturers as the responsibility did not rest with them if something went wrong with the system, and assistance was readily available. However, on the other hand, innovators who had been involved in designing their own systems disagreed with universities having the right to impose systems on lecturers. Although no lecturer reported that their institution disallowed them from using a system they had designed themselves, this was mentioned as a potential area of concern. One lecturer who

designed an e-system stated that all lecturers should have the option of doing this if they desired.

There may be some danger in lecturers feeling they are left with little choice as to what system they use for assessment. Weaver, Nair and Spratt (2005) found that shortcomings in providing good quality assessment could be related back to situations where staff had not volunteered to use a system but were required to. It is thought that staff need to take some ownership of the e-learning system in order for assessment to be of good quality. Therefore, not only do institutions need to play a role in monitoring the quantity of uptake of a particular tool, but also the quality of assessment produced from using e-systems should be measured.

3.2.2.2 Student benefit and pedagogical reasons

A number of lecturers indicated that their motivations for using e-learning tools for assessment arose from the benefit such tools provide to students. These motivations tie in with the benefits of using e-learning tools. Convenience was one motivation, as online submission meant students were allowed the option of handing in assignments right up to the due date, and that this could be made at a time, date and location that was convenient for the student.

Another motivational theme related to the student perspective was using an e-learning tool for pedagogical reasons. Providing better quality feedback was a motivating factor, as e-learning tools allowed students to get more detailed feedback, students could have access to online peer review, and lecturers could maintain an archive of student work so that better and more informed formative feedback could be given. Furthermore, designing one's own system meant that the needs of students could be met more appropriately in terms of the course.

One lecturer commented that a motivation lay in the fact that a student expectation for courses to use e-learning tools had been created due to the large number of courses that now use these tools:

R68: But the students want to ... see the course materials up there. They now expect as a standard part of every course that all the assessment instructions and all of the lecture materials will be available in Blackboard. That's just a sort of baseline now.

3.2.2.3 Productivity gain

Campton and Young (2005) noted that the use semi-automated assessment systems leads to time savings and efficiency gains. Likewise, productivity gain was another motivational theme that emerged from the interviews for using e-learning tools for assessment. Again, this motivations ties in with the benefits of using e-learning tools, for example a number of lecturers emphasised that using e-learning tools saved administration time in terms of reducing time spent receiving assignments and distributing them to tutors, avoiding checking to see if assignments had been handed in, not running the risk of losing assignments and easily storing documents.

3.2.2.4 Specific tool use

Motivation also appeared to be tied to the use of specific tools. A wide range of tools were used by different lecturers in the interviews, including learning management systems such as Blackboard and WebCT alongside word processing programs such as Microsoft Word with its track changes feature. Other systems that had been independently developed by a lecturer or required extensive implementation were also used, including Assessi, the Rasch tool, and Mathematica. Motivation to use particular tools ranged from being familiar with a tool and knowledge that students are comfortable with its format, to coming across a particular tool feature, such as Microsoft Word track changes, and seeing the benefit of it, as described below:

R38: I haven't really looked for them which is kind of funny because one of the assignments I had them do was all about evaluating things. Someone else used it for writing a report I think, I got a report back and I thought hey I could use this with my students. I had a much older version of Word and I tried using it and I found it really clumsy and especially because it didn't have the comments section so I kind of just fell into it and that was it.

Some tools were chosen due to frustration or failings when using other tools. For example, a number of lecturers turned to using learning management systems to manage assignments because they were frustrated with using purely email to receive assignments and distribute feedback, which issues like the risk of assignments being lost. Other tools such as Assessi and the Rasch method were selected because a learning management system was limited or did not meet the needs of a particular

course or assessment. For example, a lecturer designed a specific tool for a horticulture paper in which students were able to view a virtual crop and write an assignment on it. In these cases, necessity was a driving factor for using a tool as some lecturers suggested they could not see an appropriate alternative to the system they used for the particular needs of the course. This was also the case for distance courses where students are scattered nationally or internationally and where posting assignments would be difficult and time consuming.

3.2.2.5 Preventing plagiarism

One final reason motivating lecturers to use e-learning tools was to prevent plagiarism. Similarly, Stephens, Sargent and Brew (2001) suggested a system that electronically checks for plagiarism is part of an ideal assessment system for markers. An example of a lecturer who discussed a motivation to use a plagiarism checking tool for this reason is presented below:

R3 I think Turnitin has enabled me to be a little bit more confident that when I say something it's being copied from somewhere, I can prove it and I don't have to sort of search through and think gee that sounds a bit odd, I wonder where it has come from.

3.2.3 Needs of lecturers and students

A variety of different needs arose when discussing feedback and the use of e-learning tools. These were grouped into five main themes. Firstly, needs relating to course context, such as class size and availability of tutors were identified. Secondly, a need for institutional support emerged. Thirdly, a tool's ease of use was recognised. The fourth need involves specific technological needs or wishes for improvements related to individual tools. These needs impact on student needs, as staff needs in turn impact on the learning needs of students. Therefore, finally student needs were also identified by the lecturers.

3.2.3.1 Needs related to course context

One of the practical challenges around essay-type assessment is the time consuming nature of the marking that has to be performed by a human expert (p. 18 of the literature review). Consistent with this finding, one of the most common needs

lecturers discussed was time. Constraints on time were mentioned as one of the biggest factors that interfered with providing good quality feedback. Some lecturers commented that there was not enough time in the semester to give quality feedback on every piece of assessment. One of the central needs lecturers identified was the need for time to give good quality feedback to students.

The need for time also linked to class size and tutor availability. Both class size and funding dictated the availability of tutors to assist lecturers with assessment and marking. Most lecturers with large class sizes generally had access to tutors or markers to assist with marking. In this case, there was a need for lecturers to spend time organising tutors and ensuring that there was clear and consistent marking and communication among tutors. For those who did not have access to tutors, sometimes the amount of feedback given to students was not as extensive as lecturers would have liked but could not give due to a lack of time. Therefore, it seemed that balancing time taken to give feedback against the size of the class and availability of tutors was an important consideration when giving good quality feedback. The frustration involved with giving feedback to large classes is discussed below:

R36: I think the frustration for me is I would like to be able to give much fuller feedback, I mean one of the big deals for me is that I teach really big courses, so I actually don't really do a lot of my own marking, and sometimes I feel like I would walk over broken glass to be able to teach two courses with 20 students in them so I could do all my own marking and take my time over it. So I spend a lot of time check marking and arranging marking rather than marking, and that is so frustrating.

3.2.3.2 Institutional support

Related to a need for time was the need for institutional support. Time to set up new e-learning tools and the time for lecturers to learn how they worked was a need that lecturers identified, and something some felt lecturers did not have. A large number of lecturers mentioned the perceived time taken to learn about e-learning tools and how they work. That learning curve could be seen as a disincentive for lecturers thinking about using an e-learning tool. Some emphasised that lecturers needed more institutional support to develop tools or learn about new tools. The need to find time to learn how to use new tools is discussed in the extract below:

R6: Time, you know the development time, the lack of knowledge, a little bit of apprehension. Yeah just getting, making sure it's right. But as I said the more I, especially what we've experienced this semester has made me think I really must go and find ways of harnessing it. It's just that time investment upfront which will reap dividends but it's just getting the time.

Essential to the successful adoption of e-systems for assessment is a strong support network and support from the institution (Freeman & McKenzie, 2002). It has been reported that staff often experience disinterest and a lack of support from colleagues when using new e-learning tools (O'Reilly, 2005). Therefore, not only do staff need technical support on how to use a tool and how to mark using the tool, but also the environment around the staff member needs to support use of the tool. A number of reports suggest that the introduction of e-assessment systems requires a holistic institutional approach (Downton, 2006; Kennedy, Webster, Benson, James & Bailey, 2002; Kenny, 2002). In agreement with this, a number of lecturers mentioned the need for more support from within an institution about how to use e-learning tools and for help with problems, as illustrated in the extract below:

R38: I think that they should do some research, provide some guidelines, and provide some suggestions, what packages are out there. When we were looking into Turnitin I went, this should be something that's funded, there should be a central investigation as to what a good tool is or what some good tools are and then it should either be provided centrally ... rather than every single lecturer who's interested and are struggling along and doing it on their own why can't they put together ways of marking electronically.

3.2.3.3 Ease of use of e-learning tools

There were a number of issues around the ease of use of e-learning tools that emerged from the interviews. Reading on screen was one difficulty that a number of lecturers mentioned, and a number of lecturers identified a need to read on paper versus on screen. Although most lecturers marked on screen, a number commented that it was not as easy as reading paper. Some lecturers who found it more difficult to read on screen had to consciously make an effort to increase the font size and remain free from distractions. Other comments included having difficulty flicking between documents on one screen, suggesting a need for two screens, however this meant that

the lecturer could not mark at home as they did not have access to two screens at home.

R55: The other problem of course is that you do have to have a computer and internet access to do it, whereas you don't have the option of taking a stack of assignments out into the garden, or while you're watching TV, or whatever. So that's another limitation. They're more difficult to mark on aeroplanes, for example, if you're travelling. So that's an issue. And if I didn't have broadband at home it would probably be a little bit more difficult, although I do have to try and do as much as possible from work.

Other lecturers commented on problems with occupational overuse syndrome. Some lecturers identified a need to be more conscious of occupational overuse problems when working on a computer rather than paper. One lecturer however found that working on a keyboard resulted in less overuse problems than hand writing and preferred to use a computer because of this.

3.2.3.4 Technology needs and wishes

There are a number of devices that have been identified as having possible uses in the provision of feedback to students. Audio comments and audio visual feedback was a need identified by a number of lecturers from the interviews as a whole. It was thought that being able to give audio or visual feedback to students could save time in giving feedback, and make feedback clearer to students. An example of one lecturer's views about media rich feedback is below:

R5: There's clearer opportunity for tools to help in the automation of this, and my feeling is that a more media interactive or more media rich feedback with a combination of textual, audio and some video conferencing or something where I can actually point at things, would be really, really nice. If that was so easy that it would be no more different than me spending ten minutes pointing and talking to them, then that would be fabulous onto there because it's taking me that long to type things in.

Some lecturers identified a need for a laptop so they could mark assignments in a number of different locations. Tablets are another possible piece of technology that could be used for feedback. Plimmer & Mason (2006) have described the use of a

hand-held pen and a tablet laptop, which would allow markers to mark on a tablet with feedback given in a similar way to handwritten comments. Tablets were also identified by a number of lecturers from all sources as possible needs in giving students feedback.

JM: what tools would you like to have to support marking assignments?

R30: Tablets. They are like laptops. For work and assignments. I think tablets would be a resource that could be shared around the team.

Other needs that were mentioned depended on the particular tool that the lecturer used. Some lecturers were interested in tools that could help in the provision of more structured feedback, such as a database of standard comments that could be chosen from while marking. Some highlighted limitations of the tools that were used. For example, some lecturers complained that learning management systems were too clunky to use, or that they were not integrated with the centralised university system, and they wished for improvements in this area.

3.2.3.5 Needs of the student

Lecturers mentioned a number of specific needs of students based on specific e-systems. Communication with students was identified as a student need. This included making the processes around using e-learning tools clear and providing clear instructions and acknowledgement when an assignment had been received and marked. When giving feedback to students, lecturers mentioned that communication was essential, and relationships developed through feedback and through online discussion boards. For example, one lecturer commented:

R55: One of my personal feelings about distance teaching, is that the point at which you are marking is actually one of your rare opportunities to have one-to-one communication with the student, even if it is in the sense of just making comments in the margin of an assignment. So I do actually feel a bit of responsibility. In a way I feel if I am teaching the course, I probably should be doing that job rather than farming it out to a tutor

Another need of students related to help with the use of technology. Some students need a large amount of technical support and instruction in basic computing skills and in the use of e-learning tools. In particular, distance students were identified as

requiring help with the use of technology, as they lack the opportunity of getting hands on assistance. It was suggested that a lack of assistance with the use of technology ran the risk of students discontinuing with the course, as identified in the extract below:

R46: The students also use Word for all their assessments so it's a system that they know and yeah one of the things I've found with teaching distance is that yeah you have to keep the system simple otherwise yeah you lose students at the end where they just kind of don't have the technology or just get lost.

In addition, there were also a number of specific needs that lecturers noted. For example, one lecturer noted that once a course is finished, students should be able to access their archive of work and feedback that had been given on a learning management system, but at present once the course finishes the student no longer has access. This was identified as a possible need to ongoing student learning.

3.2.4 Educational aspects of feedback

Nicol and Macfarlane-Dick (2006) suggest seven principles of good feedback practice, which include:

1. Helps clarify what good performance is (goals, criteria, standards);
2. Facilitates the development of self-assessment and reflection in learning;
3. Delivers high quality information to students about their learning;
4. Encourages teacher and peer dialogue around learning;
5. Encourages positive motivational beliefs and self esteem;
6. Provides opportunities to close the gap between current and desired performance;
7. Provides information to teachers that can be used to help shape teaching.

These seven principles, in addition to the issue of validity are discussed below with reference to the data from the interviews.

3.2.4.1 Clarify goals and criteria

Nicol and Macfarlane-Dick (2006) emphasised that good feedback practice involves clarifying what good performance is in terms of goals, criteria and standards.

Effective assessment should help students to understand what is required of them when submitting assignments and appreciate what high quality work looks like. Furthermore, it has been suggested that assignment criteria need to be clearly linked to learning outcomes, and analytic or holistic scoring rubrics should be developed and made available to students before an assignment is due to give students a clear idea of what is expected of their assignment (Gronlund, 2006; Hanna & Dettmer, 2004; Linn & Miller 2005; and Nitko, 2004b).

Examples of lecturers describing the clarification of goals and criteria were evident in the interviews. The majority of lecturers described making clear descriptions of the assignment question and what was expected from an assignment available online before assignments were due. Some lecturers made information about assessment and the course available in a number of different locations in different forms to ensure that students got as much information as possible on what was expected of an assignment. E-learning tools were also described as being useful for reminding students when assignments were due by use of announcements, as described below:

R25: The first stage I suppose is that sitting in the Blackboard learning management system is an outline of all the assignments that the students will meet through the course and that also identifies what the criteria are and how that is going to be marked and also information on how it's going to be submitted, so that information is just sitting in the background anyway. We don't assume that students are going to read that automatically so what happens is that fairly early on in the piece, an announcement is put on the learning management system to give a full formal spec for the assignment, which is not a lot different from what is sitting in the information that is available anyway and that outlines what we are looking for.

Sadler (1989) stated that effective formative assessment should provide students with evidence of how well their work matches the desired goal, and help them to develop evaluative skills to compare their work with this goal. It has been suggested that taking such measures to make assignment requirements clear can make the process of giving feedback less time consuming and more effective if students understand what is expected before the assignment is completed (Black & Wiliam, 1998). Consistent with this, the majority of lecturers interviewed described developing a marking guide

or scoring rubric for assignments. Some lecturers also discussed making a marking guide available to students before an assignment was due:

R5: I have a marking sheet, basically it's a Word document which the students get to see prior to submission. It's part of that, so they know what the criteria I'm marking against is. I will mark it and fill in pretty extensive comments on the sheet, obviously giving marks under each category and comments as to what it is.

One of the distinct advantages of using e-learning tools was the opportunity they provide in facilitating discussion clarifying what is expected before an assignment is due. A number of lecturers described providing discussion boards and online forums through which students had the opportunity to discuss what was expected of an assignment with their peers, tutors and lecturer. For example, one lecturer employed a tutor to answer questions that came up on the discussion board for a period of time each day so that students could ask questions, as described below:

R19: I have a senior student that goes into the bulletin boards every day and we pay them for between ½ hour to an hour to be online for the day which is fairly heavy usage but it's worth it and they answer any queries or questions so we'll create a bulletin board especially for each assignment so they can get a discussion there of what's happening and going on. So, that is an advantage because it's tied to the tool itself and because what I've found is since we've been doing it online, they tend to use the bulletin board more because it is all online.

The use of e-learning tools to clarify goals and criteria for an assignment before it was due was identified as particularly important for distance courses, where students lack the opportunity to talk to the lecturer in class or face to face, as described below:

R68: I provide very clear guidance on what is required for all this stuff particularly because in a distance course they can't come and see me and so if you look on Blackboard it's got on there you do this and this and this and this and then you'll find somewhere else that it's stated again in different words.

3.2.4.2 Self assessment

Nicol and Macfarlane-Dick (2006) suggest that good feedback practice involves facilitating the development of self-assessment and reflection in learning. Peat and Franklin (2002) recommend using multiple choice tests to encourage students to engage in self-assessment and enhance formative learning. If students are given the opportunity to test themselves and access answers in an informal situation, this is thought to be a good form of formative feedback. A small number of lecturers interviewed described making multiple choice quizzes available to students to participate in an informal context. For example, one lecturer made a quiz available before the mid-term test and final exam. The students received automatic feedback on which answers were incorrect and what the correct answer was. The quiz was not part of formal assessment but was used purely for formative purposes. Aside from this example, few lecturers interviewed discussed using forms of self assessment, although distinctly more lecturers discussed the use of peer assessment.

Peer assessment has been identified as a good form of feedback practice. Barrett and Luca (2002) described a system in which students peer assessed other student's work online, which provided students with the opportunity to critically evaluate the work of peers and be involved in reflecting on the learning process. A number of lecturers outlined assignments in which students were required to conduct online peer assessments of other student work, or where assessment was based on online discussions. In these cases, lecturers emphasised the ease of coordination in this process by virtue of having an online system. Benefits to the student were also noted, including improving their critiquing skills and writing skills, as described in the extract below:

R36: I don't know how I would teach a form of creative writing without having an online component because a huge part of writing is getting feedback and I really believe that there are strong benefits to having peer review - I think it works for the students in terms of improving their writing and I think it works for the reviewers in terms of improving their critiquing skills and so I just I don't think I would have even tried to teach a creative writing paper at a distance if it didn't have an online component. So to me, I wouldn't be teaching the course if I didn't have this.

Therefore, although self-assessment did not seem to be a particularly common method of assessment, the opportunity to critique other's work facilitated by using online tools was discussed as holding distinct benefits for student learning.

3.2.4.3 Feedback

Delivering high quality information to students about their learning has been identified as one of the key principles of good quality feedback (Nicol & Macfarlane-Dick, 2006). It has been said that good quality feedback is "the most powerful single moderator that enhances achievement" (Hattie, 1999). Such feedback may include a discussion of the strengths, weaknesses and directions for future learning. In addition, giving individualised feedback, marking students anonymously, using multiple knowledgeable markers, and using a scoring rubric are regarded as good practice in providing feedback. Feedback that focuses on the important aspects of student learning and development is seen as a particularly crucial part of providing useful feedback, rather than placing emphasis on less important aspects of student learning, such as grammar and spelling (Black & Wiliam, 1998, Crooks, 1988).

In line with these recommendations for good quality feedback, the majority of lecturers interviewed discussed developing and using scoring rubrics to mark student work. Reasons given for using marking schedules included ensuring consistency between markers, focussing on the parts of the assignment that are important, and guiding the marking process.

The majority of lecturers described returning marking sheets to students online using a learning management system or email. Nitko (2004b) noted that individualised feedback providing detailed information on the quality of an answer should be given in conjunction with an analytic scoring rubric. Some lecturers structure feedback to students by giving feedback as to how each part of the marking criteria was covered, therefore clearly delivering feedback based on goals. The majority of lecturers also discussed the importance of making feedback individualised and focused on the terms of the assessment so students could learn formatively, as discussed in the extract below:

R25: I find that it is more important to comment specifically to what they have been asked to do so that the next time they submit an assignment, they consider that, I am really marking against this, not just looking at your paper on it's own merit.

So in a way I want to use that form to convey it back and the other thing is that it is being used that way through the graduate certificate so that feedback format is something that is consistent.

Some lecturers indicated that they provided substantially more feedback that was more detailed when they marked electronically rather than on paper. However, it is unclear whether this feedback is more useful to students than feedback given via other methods, as the nature of the feedback was not often described in-depth. It has been found that feedback focused on justifying marks is not as useful for improving student work than feedback that makes suggestions about how work could be improved (Black & Wiliam, 1998). For example, comments about spelling and paragraph structure may be less helpful formatively than constructive comments about the important aspects of the assignment. Therefore, it remains unclear whether lecturers gave examples of how to close the gap between student work and what was expected in a way that students found useful.

One aspect of feedback that lecturers commented was particularly challenging was providing positive and encouraging feedback in addition to critical and constructive feedback. Lecturers identified that online feedback had the potential to be direct and straight to the point, running the risk of coming across as overly critical to the student. This concern is illustrated in the extract below:

R38: It's really easy to give the negative feedback, "you need to work on this, what about this, where's this," but giving the positive feedback I find much, much more challenging ... thinking of new ways of explaining things so that they'll understand what I'm getting at and especially when you're marking the 50th essay trying to keep a fresh mind.

In regards to the concern of providing positive feedback, McLachlan-Smith and Irons (1998) noted that developing a statement bank of frequently used comments can make the process of giving feedback and positive comments more efficient. Some lecturers also mentioned that they often inserted a stock of positive statements about a student's work before they marked it so the feedback wasn't wholly critical of the student's work. Also, for lecturers with large class sizes, one way to provide in-depth feedback identified was to use stock comments from a large bank so that comments could be individualised each time, but did not have to be typed out each time. This may be one

technique that could be used by lecturers of large classes to provide positive individualised feedback to all students in a reduced amount of time.

Linn and Miller (2005) noted one of the practical challenges of assessing student work is the time consuming nature of marking and giving feedback. Consistent with this report, one of the overriding issues discussed by the lecturers was time. Most lecturers commented that providing appropriate feedback was often governed or overridden by time constraints. However, in contrast to this, some lecturers emphasised that online feedback saved time. Providing feedback online led to the ability to give more feedback to students as they had more time to do so and giving feedback was faster online than using traditional paper methods.

Some lecturers also noted that students may not have the opportunity to devote the required time to reading feedback because of the pressures of assessments and stressful workloads.

Sadler (1989) espoused the importance of appreciating what good quality work looks like. In accordance with this, some lecturers suggested that providing examples and models was good practice. Another possibility mentioned was making general class feedback available and including in it examples of common mistakes that were made in assignments. This gives students the opportunity to learn from other people's mistakes. However, it was also suggested that providing models of assignments may lead to students viewing it as the 'best' model of practice, which could limit their creativity, as described below. Therefore, the examples given may need to take the specific assignment into consideration.

R19: One of the biggest dangers we have is I don't like giving model answers and I refuse to give model answers of the programmes because then what you do is you get them programming like you, because there are multitudes of solutions to a problem some solutions are better than others but that's not to say that any particular solution that I create that a student hasn't come up with a much better solution and there's a danger that those very bright ones will then code to your style rather than their own creative style.

A common issue that was identified by a number of lecturers as a particular concern of providing feedback online was the possibility of directly modifying and changing student work. This was a particular issue when marking online, as changes or

deletions to student work could be made inadvertently, or suggested changes in Word track changes could be accepted by the student on return without them necessarily considering the feedback. Therefore, some lecturers guarded against this by making comments on separate documents or by adding extra comments around the work to avoid altering or changing original student copies. This concern is highlighted in the extract below:

R25: The fact that I don't mark their original paper can mean that they have to think about the feedback that I am giving isn't in the context specifically, they have to read that and look back and their original and go "now I understand what he means", whereas if there was a physical paper, that I had marked on and they can see very much the context of what I am saying, there are bits underlined and things like that, saying this thing. So that format would be a disadvantage I think to students.

It has been suggested that the mere presence of summative information on student work (such as a grade or a mark) diverts student attention away from the more detailed comments provided. There are numerous reports, from teachers and students, that students often pay little attention to specific feedback if a mark or grade is also provided. These reports are accompanied by a few tantalising pieces of research. Black and Wiliam (1998) cite the research of Butler (1988), who found little learning benefit from feedback that consisted of marks alone or marks together with written comments, but substantial learning benefits where the feedback consisted solely of written comments. A small number of lecturers also noted this as the case, and emphasised the importance of providing formative assessment and feedback that students could make use of in following assignments, as described below:

R40: So what you're getting is students turning up for their mark and they come to the office and obviously the first thing they do is look at their mark which I think isn't the optimum outcome and that isn't what I want them to be looking for but it makes sense to them sort of rational economic people they're going to look for their mark first. Now I would like to have a way of doing assessment where the mark wasn't the most important outcome but I'm damned if I can think of how you'd do it.

Therefore, this emphasises the importance of providing formative assessment, but this may have to be balanced against the issue of time that students have to engage in 'non-marked' work.

3.2.4.4 Dialogue

Dialogue between students and teachers or their peers has been identified as a key component in providing effective feedback to students (Nicol & Macfarlane-Dick, 2006). A study by Orsmond, Merry and Reiling (2005) noted that some students would like more opportunity to discuss feedback than they are given. It seems that e-learning tools may provide more opportunity for dialogue than traditional methods. O'Reilly (2005) noted various aspects of learning designs that become possible and manageable by utilising e-learning technologies. In support of this, a large number of lecturers described using online bulletin boards or forums to discuss assignments or questions about a course with the lecturer and other students. This provided students with the opportunity to ask questions of lecturers or tutors and have them answered online. It also gave students the opportunity to engage in discussion about the course or assignments with other students.

Involving and engaging students in an online space was recognised as an advantage of using e-learning tools. Some lecturers commented that having a social space for students to share in a bulletin board provided an incentive for students to go online and encouraged more of a community spirit. This was identified as a particular advantage to distance students, who may feel isolated from other students on the course. An example of providing a social discussion forum to students is illustrated in the extract below:

R68: They have a social discussion board and they also have one about course administration, where's my marks, why didn't I get it or whatever, you know, my PC doesn't work or whatever and they've also got specific ones on I'm having problems with my programming in this or this. So we keep them up. Everyone has to post something to the social ones and then there's a separate discussion board for the 'discuss that weeks topic with just their group people'. But the idea of the social one is so that every time you log on there's something of new interest to see, you're never going to find nothing there and so I started off by seeding it and away it goes.

Sadler (1989) argued that self-assessment is a vital component in learning. If students are asked and encouraged to critically examine and comment on their own work, assessment can become more dialogue than monologue, and can contribute powerfully to the educational development of students. A small number of lecturers described how they encourage students to engage in critically analysing their marked assignments and engaging in dialogue with the lecturer about their mark. This was noted to be a learning experience for the student as well as providing a possibility to improve their mark, as described below:

R60: I give them something that most of my colleagues find very strange, I give them a period of one week after they get their feedback through Blackboard I just upload what we marked through their assignments, and I tell them look at your assignment, really engage with what the marker had to say about your work and if you think that is not accurate, you write a two or three pages reply to that. Take into account what you learned from this assignment and from the feedback and you come to me and give me this paper and explain.

3.2.4.5 Motivation

Encouraging motivational beliefs and self esteem in students are thought to be factors involved in good feedback practice (Nicol & Macfarlane-Dick, 2006). However, the underlying theme to a number of lecturer comments about motivation were that students were often under a lot of pressure with large course loads that they did not have the time to devote to consulting feedback and working on feedback the lecturers gave them for each assignment, as described below:

R40: I doubt very much if any of them went through their returned files and looked at the track changes, but then I doubt if many of them go through them anyway. Once they've got their mark back they move on and I think it comes back to a much bigger issue which is the length of the semesters and I think that we're now crowding so much in to thirteen weeks that they're not able to utilise the feedback they're getting. Once the assignment's dealt with it's history and they've moved on to three other assignments, whereas you really want the next assignment to build on the feedback to the previous assignment.

Campton and Young (2005) and Nesbit and Burton (2005) have cited fairness of assessment as a concern of students that can impact on student motivation. It was

found that a negative perception of fairness can have a negative impact on performance. Students who receive lower marks were found to be more likely to have justice concerns, which can reduce motivation and have a negative impact on future performance. Therefore, improving on students' views on the fairness of assessment has been suggested as a means to increase performance (Nesbit & Burton, 2006). It is possible that the use of e-learning tools might help to make assessment more transparent to students, as assessment can be perceived as more fair, breaking the negative performance cycle which can reduce motivation (Jones, Cranston, Behrens, & Jamieson, 2005). Some lecturers identified the need to provide students with adequate technical support, prompt responses to questions voiced on discussion boards and keeping feedback individualised and positive to keep motivation high. An example of a lecturer who aims at increasing motivation of students by encouraging them to log on to a discussion board is outlined below:

R68: They get a substantial but not large amount of marks immediately because my experience of running distance courses is that you've got to get them hooked in the first two weeks. If you don't get them then the chances are they won't finish and so the whole thrust of this course is to get them to do something. So for example every week they have to post something onto the discussion board, a social discussion. I don't care if they talk about rugby or desperate housewives or whatever. The theory is that if I can get them to go on to do that little trivial thing then it's more likely they'll open up the assessment and it's more likely they'll look at the assessment, it's more likely they'll do the assessment.

3.2.4.6 Close the gap

Nicol and Macfarlane-Dick (2006) emphasised attempting to close the gap between current and desired performance as a principle of good feedback. Although this was not an issue that was discussed by lecturers at length, some suggested that e-learning tools provide lecturers with the opportunity to assess past performance with current performance by virtue of the fact that they were able to keep an electronic archive of student's past assignments. Having an archive facilitates accessing a student's previous assignments and feedback that had already been provided to them. Some lecturers also discussed the importance of giving timely feedback so students can take into account the feedback they were given when working on a following assignment,

which provides students with the opportunity to close the gap between their current and desired performance. This is a key part of learning and, as Orsmond et al. (2005) reported, a number of students read and reread comments. An example of a lecturer describing providing continuous feedback to students is presented below:

R5: My response is let's have a number of assignments and I think I had four, it might be five that start off really simple. They build up over that period and there's no point me giving back another assignment until the next one, unless the previous one is marked on there. So by sizing them and basically having some support to turn them round, you know I want to give them continuous feedback.

3.2.4.7 Shaping teaching

Dissemination of information to teachers to help shape teaching is another principle of good feedback practice identified by Nicol and Macfarlane-Dick (2006). Providing information about how to use e-learning tools to provide feedback is one basic way to shape teaching practice. The majority of lecturers described their institution as encouraging them to use the learning management system supported by the institution. In such cases, training was often made available to lecturers on how to use the system. Some lecturers expressed being 'forced' to use certain e-learning tools by their institution, as identified in the extract below:

R60: Yes I use what I get here, it is a kind of standard package.

JM: Okay and how do you find out about new tools or techniques?

R60: We are forced to know!

JM: You are forced to know?

R60: Yes well when you start working here you have this induction course and there is one session if I remember correctly where they introduce you into the Blackboard system plus then it is probably on a monthly basis, where you can just go to the University teaching development centre and participate in courses that go into particulars like how to design tests for instance or how do exactly this, I think I participated in one and it was actually how do you use assessment tools and feedback tools through Blackboard.

In addition to training on using learning management systems provided by the institution, lecturers also expressed learning about e-learning tools through e-learning contacts or training contacts through the institution. Some lecturers also attend conferences or events such as e-Fest, and a small number identified learning about innovations in technology through journals or newsletters. However, in the majority of cases, these actions were initiated independently and were not necessarily encouraged by the respective institutions.

In addition to the importance of training on how to use e-learning tools, O'Reilly (2005) suggests that lecturers should be better informed about teaching and learning issues. O'Reilly analysed her exemplar approaches of online assessment against the model of scholarship of teaching proposed by Trigwell et al. (Trigwell, Martin, Benjamin & Prosser, 2000). The model captures the importance of both scholarship of teaching and teaching as scholarship. It describes the importance of staff being informed about teaching and learning issues, applying this in their own teaching practice, and disseminating findings to the benefit of the wider community of students and colleagues. O'Reilly believes staff should be offered more opportunities to learn from other lecturers.

However, the extent to which lecturers were provided with institutional support on teaching and learning issues was unclear. It seemed that although training was given on how to use the learning management systems provided by the university, it was unclear as to the depth of the training provided, and whether training addressed pedagogical issues surrounding the provision of feedback. Another theme that emerged from the interviews with lecturers was the fact that lecturers and their colleagues often stick with systems that they know rather than trying different techniques of providing feedback or trying new e-learning tools. Therefore, it appears that staff may be given limited opportunities to learn about teaching and learning issues as O'Reilly discussed them.

Despite this, there were a number of innovators amongst the lecturers interviewed who had developed their own systems to meet the needs of the course or a paper. In these cases, the lecturers may have started out alone but had encouraged others to use the same program or others had requested that they could use it, providing evidence of lecturers shaping others teaching practice. An example of this is illustrated below:

R5: I have been trying to encourage them [other colleagues] by literally saying, based on experience I've used this and if you've got a large class in the first semester I said it was a big plus but there's not that many large classes, but as I say the second semester which is a more conventional sized class - it's certainly made it a lot easier so we'll continue to sort of highlight the potential benefits of it and hopefully get them into using it.

3.2.4.8 Validity

Validity, the extent to which a form of assessment fulfils its intended purpose is an issue that should be addressed in planning, implementing and reviewing assessment procedures. Lecturers frequently validated their choice of systems and tools used by explaining it was the best system to use for student learning, class size and the particular course offered. Lecturers discussed tailoring assessment and their use of e-learning tools in different courses based on the needs of the course or the students. For example, in some smaller courses, some lecturers suggested that the use of particular e-learning tools was not necessary, as providing feedback on paper was more appropriate, but for their larger courses they preferred to use e-learning tools for assessment and feedback purposes. This suggests that lecturers choose systems of assessment based on the needs of the student and the course, as illustrated in the example below:

JM: Are there any courses where you don't use these tools for the marking and management of assignments?

R68: In my personal case I only teach small courses outside of this one. Small courses being sort of Masters level stuff so it's not appropriate for that. These are face-to-face tutorial type courses where you have six, eight, ten students and that sort of stuff and I see no advantage using technology there.

It has been said that assessment plays a central role in higher education and should facilitate the goal of preparing students for lifelong and autonomous learning. Therefore, as it is widely acknowledged that assessment drives student learning and directs student effort, in order to be valid, assessment design must be planned accordingly and must be an integral part of course design (Kendle & Northcote, 2000). Nicol and Macfarlane-Dick (2006) advocate that to move forward, students need to be given more responsibility for assessment processes. As well as this, Taras

(2002) suggests that students should be encouraged to participate in this process. It has been suggested that assessment in higher education does not yet give enough consideration to educational goals, assessment design and impact on students (Nicol & Macfarlane-Dick, 2006; Taras, 2002). However, there was some evidence of lecturers asking students for feedback on their teaching practice. For example, some lecturers expressed asking students to give them verbal or written feedback on their feedback or how they found certain assignments.

Reliability and validity in assessment procedures was another issue discussed by a large number of lecturers. The majority of lecturers discussed some form of keeping marking reliable, such as using marking schedules, or moderating marking before assignments were returned to students. This was particularly the case for larger classes where tutors or markers were involved in marking. Some lecturers suggested that using e-learning tools for the moderation of assignments was particularly useful, as illustrated in the example below:

R2: Yeah I think it is easier for moderation purposes because like the same group we have internal classes as well as EDO classes, if electronically submitted then we can moderate each other's work otherwise some are Word Document and some are in hard copy and some are not and then there are problems in moderating also, because you can just send and its quick and faster and then we need not meet face to face, the tutors and just moderate and see.

3.3 Summary of types of use of technology

This description summarises how some lecturers use their learning management systems and tools like Microsoft Word to help them with the assignment marking process.

Context

The assignments are reports of 2000-3000 words and are for campus and distance students. There are over 100 students in the classes so a team of 2-5 people mark the assignments.

The assignment marking process

The lecturer provides students with the assignment and direction on the assignment and what is expected. A discussion board is setup so students can clarify points and discuss the assignment.

Students submit their assignment using a learning management system such as Blackboard or Moodle. This provides students with a message that the assignment has been uploaded and the lecturer with a message that the assignment has arrived, submission time and who submitted it. Assignments are submitted to a plagiarism checker.

The markers have a marking guide and discuss the assignments before marking. They add comments into the assignments using the Microsoft Word comments feature and use a general feedback template for general comments. The course coordinator moderates the marking after the markers have finished. An administrator transfers marks from the learning management system into the central student records system. Students get their marked assignment, the feedback sheet and the mark via the learning management system.

Students have the opportunity to consider the feedback and consider if they believe it was just. General comments are made to the whole class in the discussion boards.

The benefits

The lecturers cited efficiency gains with more organised administration that saves assignments getting lost. There were gains in the ability to provide better quality and more timely feedback to students. Part of this was due to having an archive of student work to check through when giving feedback. Other benefits included convenience and that marking on the computer was environmentally friendly. Student preference is for submission of electronic copies.

Key to success

The markers need to be familiar with computers, filing, learning management systems and Microsoft Word features comments and track changes.

Some lecturers will want to mark on paper so any electronic tools should be optional.

Variations

Some lecturers reported using specialised tools. These tools help lecturers manage the marking process such as integrating the marking guide into the marking process and helping to administer the marking process. They help provide some quality assurance by providing ways for marking teams to share information about marking and helping to compare marks and comments from different markers. Example of these include MarkTool and WebCTConnect (Heinrich, 2006), and Assessi (Laird and Baxter, 2005).

Some lecturers, generally those who mark all of the assignments themselves, use their email systems to receive and return assignments. The advantage of this software is familiar to lecturers and students are so they can easily use it. There are a number of disadvantages to this approach. Some of the administration features in a learning management system or specialised system are not available. There can be problems with mailboxes getting filled up with assignments or student mailboxes being full and not accepting the return of the marked assignments.

4 Analysis of key issues in the assignment process

4.1 Introduction

Section 3 presented the analysis of the interview data in terms of general criteria such as motivation of lecturers, benefits, needs of the lecturer and educational aspects of feedback. The analysis by themes in Section 3, required very intensive coding that was fully applied to 30 interviews, with the remaining interviews being partially coded.

The issues analysis in this section focuses specifically on the assignment process and the practices and tools employed by the interviewees. The prevalence of the various technologies is investigated as are the factors influencing the lecturers' choices. The motivation behind the issues analysis was twofold. First, to explore the interview data from a second perspective. Second, to ensure that all interview data was fully included in the analysis. The analysis by issues was less time consuming and could be applied to all interview transcripts.

4.2 Methods

The interview transcripts were read and analysed by issue. Of the 90 participants interviewed 88 transcripts were available due to two interviewees not consenting to be recorded or not releasing the transcripts. Whilst reading the interviews a checklist was used to record the key steps in each interviewee's assignment process and their methods of dealing with specific issues. This checklist is presented in Appendix D. More detail of the checklist is provided in Appendix E. The checklist of issues was developed to identify the following:

- Key principles of good assessment as defined by Nicol and Macfarlane-Dick (2006). These include clearly clarifying goals, delivering guidance and high quality feedback and setting up of communication channels between teacher and student.
- The steps in the assignment process – submission and return of assignments, marking, providing feedback and general administration.
- The extent to which electronic tools are being used.

This checklist acted as a basis from which to compare actual practice to the ideal. For example, Nicol and Macfarlane-Dick recommend that lecturers allow students to discuss the assignment goals and criteria. The analysis by issues checklist quantifies the number of interviewees who actually allow students to do this.

During the interview process most of the issues outlined on the checklist were either prompted for or came up in conversation. Issues were recorded as either 'yes', 'no' or 'unassigned'. Whilst reading through the transcripts it was straight forward to go down the checklist recording the issues as they were addressed. The unassigned value was only given when the interviewee did not speak on or failed to clearly clarify an issue. Key quotes and insightful comments from the interviewees were also noted and kept track of.

Initially two researches independently completed the issues checklists for several of the transcripts and then compared results. Any discrepancies were discussed and the meaning of the issues was clarified. From there a single researcher issue coded all the transcripts. It was decided that when recording the issues the general rule was taken and any small exceptions were ignored. For example, a class of 40 students in which all but three students submit assignments on paper would be recorded as *Paper* rather than *Paper & Electronic* submission. Similarly, for a lecturer who posts students' marks and feedback on the LMS but prints and mails a few students transcripts on request *LMS* not *Paper & Electronic* return would be recorded.

4.3 Issues Definitions

This section provides information on the issues investigated. The issues are named and the questions presented the researchers asked themselves when reading through the interviews to assign values for the issues. More insights in issue definitions will arise from the discussions on the issue findings, reported on in Section 4.4.

Issue 1 – Supporting students with assignments

Issue 1.1 – Clarify good performance; perhaps show what good performance is.

Issues 1.1 and 1.2 look at the interviewees' practice and their general attitude towards setting assignments. Does the interviewee clearly define the assignment task; handing out assignment briefs, providing a detailed outline of goals and learning outcomes etc?

Issue 1.2 – Allow students to discuss the goals so they understand them.

Once an assignment task has been set does the lecturer allow or facilitate discussion about the assignment? This may be further clarification, questions and queries from the students requesting guidance etc.

Issue 1.3 – Make electronic communication part of the assessment.

Electronic communication includes email, discussion forums, online journal entries, wikis' etc. Whether interviewees utilise these tools is assessed in Issue 1.4. Issue 1.3 investigates whether such tools are part of the assessment; is forum participation a course requirement, online journal entries marked etc?

Issue 1.4 – Use tools to communicate with students about the assignment.

Issue 2 – Submission of assignments

How do students submit assignments? During the interviews participants were encouraged to talk in detail about their entire assignment process. Assignment submission was coded as learning management system (LMS), specialised system, email, solely paper, paper and electronic or CD or DVD. LMS includes WebCT, Moodle and Blackboard. Specialist tools in this case are dedicated submission aids, sometimes used in conjunction with the LMS.

Issue 3 – Preparation of marking

Issue 3.1 – Prepare electronic submissions for marking.

Electronic preparation includes any operations a lecturer carries out on the electronically submitted assignments; renaming or moving files, converting file-types, unzipping etc.

Issue 3.2 – Use tools to organise markers.

Do lecturers use markers and if so, what electronic tools are used to organize them? Shared drives, assignment databases, LMS assignment tools etc.

Issue 3.3 – Do lecturers print assignments?

Issue 3.4 – Do lecturers use tools to check for plagiarism?

To be coded as *Yes* the use of such tools does not have to be ongoing use, or full integration into the marking process. Any lecturer using electronic means to screen

assignments for plagiarism, even only once or twice during a semester is coded as *Yes*. Answers are not limited to 'specialist' tools such as Turnitin. Document and Google searches are also valid and recorded as such.

Issue 4 – Marking

Issue 4.1 – Use an electronic repository of frequently used comments.

Do lecturers providing electronic feedback reuse feedback comments? Answers can range from sophisticated feedback repositories that a lecturer had built up overtime to copy-and-paste comment lists lecturers compiled whilst marking the current assignment.

Issue 4.2 – Provide feedback in electronic form directly in the body of the electronic assignment document.

The next three issues record the style in which interviewees provide feedback. Interviewees would often use a combination of feedback methods, that is 'inline' comments, feedback at the end and general comments. Methods for providing electronic feedback in the body of the assignment include track changes in Microsoft Word, changing font or text colour and commenting in-between assignment paragraphs.

*Issue 4.3 – Provide feedback with general comments at end of student assignment***.**

Issue 4.4 – Provide feedback in electronic form separate to assignment document.

This includes any electronic feedback provided separately to the assignment document; marking schedules, model answers, general or individual comment sheets etc.

Issue 4.5 – Do lecturers mark on paper?

Issue 4.6 – Use tools to assist with the quality control of one's own marking.

The definitions of 'tools' in Issues 4.6 – 4.9 are flexible. In this case they include specialist software such as WebCTConnect as well as general tools such as Microsoft Excel spreadsheets. Referring back to the electronic copies of previously marked assignments for quality control checking is also coded as *yes*.

Issue 4.7 – Use tools to keep track of the marking status of assignments.

Again, not only specialist tools or LMS use is considered. File re-naming, the use of a shared drive, and spreadsheets were also coded as tools.

Issue 4.8 – Use tools to manage the work of markers.

Issue 4.9 – Use electronic tools to assist with moderation.

Issue 5 – Keeping records

Issue 5.1 – How are marks recorded and analysed?

Coded as either electronic or paper.

Issue 5.2 – Are marks transferred into other systems?

What happens to the results from assignment marking? Are they transferred to a central database?

Issue 5.3 – Keep historic records of marked assignments for more than one year?

Interviewees did not always explicitly state the length for which they kept records of marked assignments. If a participant mentioned keeping assignments for the subsequent semester they were also coded as *yes*.

Issue 6 – Releasing results and feedback to students

Issue 6.1 – Does the lecturer provide feedback to the class about their performance in general?

This may be either in written from (handouts, online documents) or face-to-face (lectures, tutorials).

Issue 6.2 – Return electronic assignment copies annotated with feedback.

Issue 6.3 – Are marks returned before feedback?

Are marks and feedback returned together? In what order are they released to the student?

Issue 6.4 – Do lecturers discuss the marks and feedback with students or provide opportunities for the students to do so?

Any communication between student and teacher about assignment results/feedback is of recorded. What are the lecturers' attitudes towards such discussion, do they make themselves available to students? Face-to-face discussion, email correspondence are all valid methods here.

Issue 6.5 – How are marks and feedback returned to the student?

As with submission method, return method is coded as either LMS, specialised system, email, solely paper, paper and electronic or CD/DVD.

Issue 6.6 – Provide opportunity to close the gap.

This was a broad issue to code. Opportunity to close the gap includes resubmission of assignments, feedback on drafts, allowing time to reflect on feedback, exercises to prepare students for subsequent assignments etc. This issue has parallels with issues 7.1 – 7.3. Any degree of resubmission of preliminary feedback was coded as *yes* to Issue 6.6. This includes providing ongoing formative feedback for post-graduate students' thesis' or research projects'.

Issue 6.7 – Are electronic tools used to assist in the appeals process?

This issue was not used to identify a specific tools but the acknowledgement of use of assignment records and feedback databases in addressing student appeals.

Issue 7 – Using the assignment experience for future teaching

Issue 7.1 – Extract examples of student work for future teaching.

These issue focus on the interviewees' general practices and attitudes towards using student work to inform future teaching. Are lecturers altering their teaching in response to students work? Are recurring errors in assignments addressed? Issues 7.1 – 7.3 were not prompted for during the interview process. Those who did address them would do so in general conversation at any stage during the interview.

Issue 7.2 – Use the assignment experience for future teaching.

Issue 7.3 – Analyse strengths and weaknesses across all assignments.

4.4 Findings by Issue

Table 4.1 shows the issues checklist and data from all 88 interviews included in the analysis.

Issue	Yes	No	Un-assigned	No Markers
1 Supporting students with assignments				
1.1 Clarify what is good performance	51	3	34	
1.2 Discuss goals with students	56	2	30	
1.3 Make electronic communication part of assignment	27	45	16	
1.4 Electronic tools for communication about assignment	62	10	16	
2 Submission of assignments				
2.0 *see below*				
3 Preparation of marking				
3.1 Prepare electronic submissions for marking	68	15	5	
3.2 Use Tools to organise markers	23	24		41
3.3 Do lecturers print assignments for marking	35	53	0	
3.4 Use tools to check for Plagiarism	31	38	19	
4 Marking and providing feedback				
4.1 Electronic repository of frequently used comments	32	33	23	
4.2 Provide electronic feedback in body of assignment	49	37	2	
4.3 Provide feedback at end of assignment	79	8	1	
4.4 Provide electronic feedback separate to assignment	36	42	10	
4.5 Do lecturers/markers mark on paper	51	37	0	
4.6 Tools used for quality control of one's own marking	26	42	20	
4.7 Tools used to track marking status of assignments	29	40	19	
4.8 Tools used to manage markers	21	26		41
4.9 Electronic tools used for moderation	13	29	46	
5 Keeping records				
5.1 *see below*				
5.2 Are marks transferred into other systems	66	4	18	
5.3 Keep historic records of assignments	17	8	63	
6 Releasing marks and feedback to students				
6.1 Provide general feedback to the class	50	1	37	
6.2 Return electronic assignment annotated with feedback	48	37	3	
6.3 Return feedback then marks	5	69	14	
6.4 Discuss marks & feedback with students	68	1	19	
6.5 *see below*				
6.6 Provide the opportunity to close the gap	48	7	33	
6.7 Electronic tools to assist the appeals process	6	10	72	
7 Using the assignment experience for future teaching				
7.1 Extracting assignment. examples for future teaching	5	2	81	
7.2 Use the assignment experience for future teaching	12	2	74	
7.3 Analyse strengths & weaknesses across assignments	13	0	75	

	Electronic	Paper
5.1 Method for recording/analysing marks	85	3

	LMS	Specialised Systems	Email	Paper	Paper & Electronic	CD or DVD
2.0 Method for assignment submission	29	9	15	4	31	0
6.5 Method for returning marks & feedback	20	8	23	10	27	0

Table 4.1: Issues checklist results from all 88 interview transcripts

4.4.1 Supporting Students with Assignments

Fifty-four lecturers spoke about the setting up and defining assignment tasks; 52 of these clearly outline assignment tasks and clarify the expected performance for students (Table 4.2). Most posted assignment briefs on the LMS, many handed out task descriptions and some issued course handbooks at the beginning of the semester, outlining all the assignments and the desired learning outcomes. Encouragingly, 56 interviewees allow students to discuss goals and make further inquiries about the assignments whether it be face-to-face, via email or discussion forum based.

Issue	Yes	No	Unassigned
Clarify what is good performance	51	3	34
Discuss goals with students	56	2	30
Electronic tools for communication about assignment	62	10	16
Make electronic communication part of assignment	27	45	16

Table 4.2: Issues relating to supporting students with assignments.

The use of electronic tools for communication about the assignment is widespread, with 62 of the interviewees doing so (Table 4.2). Discussion forums, LMS, online journals and email all constitute electronic tools. Discussion forums are the most prevalent – many distance courses relying on them entirely for communication:

R8: The main form of communication is the discussion board.

Some lecturers (27) give students marks for their communication. This could be providing marks for discussion postings or more rarely marking wiki or blog assignments.

	Course locality			
Electronic tools to communication about assignments	Campus	Campus and distance	Distance	**Total**
No	7	3	0	10
Yes	18	13	31	62
Unassigned	9	3	4	16
Total	34	19	35	88

Table 4.3: Use electronic tools to communicate with students about the assignment compared to course locality.

The use of electronic tools for communication is not limited to distance papers – over half of the solely campus based courses also utilize them (Table 4.3). Interviewees said that discussion boards streamline the defining and clarifying of assignment tasks and avoid duplication of students' questions. They also mentioned that discussion boards are a good starting point for familiarizing students with the LMS and often encourage forum participation in the first few weeks of term. In addition to the efficiency gains many interviewees felt discussion forums resulted in higher quality responses from, and better discussion between, students:

R78: What I have found using it (forum) is that the depth of sharing that you get in the classroom is a lot less than the depth of sharing that you get online.

R79: The students are getting a tremendous amount of value (from forums), especially from the older students, who are my age and older who are actually practicing what we are discussing theoretically here and so the younger students are getting real value in listening to what these guys say.

Lecturers widely acknowledged these benefits. Nearly half of the 62 interviewees using electronic tools for communication assess students' forum contributions or make electronic communication a part of assignments.

4.4.2 Submission of Assignments

Most interviewees (53) use solely electronic forms of assignment submissions (LMS, specialised systems or email), 31 use a mixed media submission (electronic and paper) – the remaining 4 used paper only. A combination of paper and electronic submission was the favoured method for assignment submission closely followed by LMS (Table 4.4).

Submission method	Number
Email	15
LMS	29
Paper	4
Paper & Electronic	31
Specialised Systems	9

Table 4.4: Methods used for assignment submission.

Submission method is linked to course locality (Table 4.5). Interviewees who teach distance courses were more likely to use solely electronic methods of assignment submission. Submission method was not directly linked to either class level or class size. In fact, for classes with over 10 students the percentage of students using electronic means of submission was relatively constant. Some lecturers alter submission method depending on the nature of the assignment; others gave students a choice of submission methods.

	Course locality			
Submission method	Campus	Campus and distance	Distance	**Total**
Electronic	16	11	26	53
Paper and electronic	15	7	9	31
Paper	3	1	0	4
Total	34	19	35	88

Table 4.5: Submission methods compared to course locality.

	Faculty							
Submission Method	AR	CS	CA	ED	HS	MB	SC	SS
Email	0	2	0	3	2	3	0	3
LMS	0	14	0	2	1	8	2	0
Paper	0	0	1	0	1	1	1	0
Paper and electronic	2	3	1	5	4	11	1	4
Specialised systems	0	2	1	0	0	2	3	0
Total	2	21	3	10	8	25	7	7

Key:
- AR Arts
- CS Computer Science/IT
- CA Creative Arts
- ED Education
- HS Health Sciences
- MB Management/Business
- SC Sciences
- SS Social Sciences

Note, N= 83 for this table as some interviewees did not align with one department so were excluded from this table.

Table 4.6: Submission method compared to faculty.

Considering all interviewees had access to an LMS and 77 of the 88 did employ them in their courses to some degree, submission by this method was relatively low. Only 29 participants used LMS submission (Table 4.4). The four participants who receive

solely paper submissions use technology in other areas including online discussion and publishing course material and marks on LMS. Investigating submission method with respect to faculty showed that LMS submission is highest in the computer sciences (Table 4.6). The management lecturers favoured a joint paper and electronic approach (Table 4.6).

4.4.3 Preparation of Marking

Sixty-eight interviewees process electronic assignment submissions before marking. This can involve downloading, unzipping, moving files, converting file-types, sending to markers and renaming. Preparation of electronic submissions was high across all faculties, and highest in the computer and social sciences. The type of assignment preparation was typically related to file identification and naming issues. This could be significantly reduced by clearly defining file types and naming conventions in assignment briefs.

Yes	35
No	53
Total	88

Table 4.7: Do lecturers printing assignments for marking?

Considering that the sample were selected because of their use of electronic tools there were a large number of interviewees who print electronically submitted assignments for marking (Table 4.7). The interviewees who print assignments include those who print out an assignment occasionally. This does not usually apply to all assignments – it is often dependant the assignment type. Interviewees were printing assignments to better see tables or diagrams and some found it easier to navigate certain material when on paper. Other motives for printing were the mobility and 'look' of paper:

R86: I find it easier to read when I print it off on paper than I do up on a computer screen.

4.4.4 Plagiarism

Interviewees were concerned about plagiarism. Thirty-one talked about using tools to check students' work (Table 4.8). Most of these lecturers use Turnitin, others perform a Google search using phrases from the assignments:

R11: Advanced Google Search used in trying to track down things I thought were plagiarised.

The majority of interviewees using Turnitin usually submit the assignments themselves; few have students self-screen their work. Turnitin returns a similarity percentage. Interviewees commonly set a threshold value, say 40 %, a similarity percentage over which would be a fail, or at least, serious discussion with the student. The similarity index also provides a context for marking by illustrating any faults in the students' citation and referencing techniques. Several lecturers spoke about Turnitin's educational gains and use it as a tool to improve students' writing skills:

R36: 'I use Turnitin as a teaching opportunity rather than a throw you in to jail and throw away the key attitude … the great thing about Turnitin is that it gives you a printed report that is colour coded and so you can sit with a student and say look this is what you are doing, you are paraphrasing and you are not putting in a citation or you are treating this as if it is a citation, but actually it is a quotation because of this and so that is why there is a problem here. You can really teach them …'

Yes	31
No	38
Unassigned	19
Total	88

Table 4.8: Did interviewees using tools to check for plagiarism?

4.4.5 Marking

The vast majority of interviewees voiced their opinions on the importance of assignment feedback, their views often echoing good practice as defined by Linn & Miller (2005) and Torrance & Pryor (1998). Providing feedback at the end of the

assignment was the favoured method with seventy-nine interviewees doing so (Table 4.9). Many interviews provided feedback in the body of assignments as well as at the end or separate to assignments.

Issue	Yes	No	Unassigned
Provide electronic feedback in body of assignment	49	37	2
Provide feedback at end of assignment	79	8	1
Provide electronic feedback separate to assignment	36	42	10

Table 4.9: Method for providing feedback.

	Faculty							
Electronic feedback in the body of the assignment	AR	CS	CA	ED	HS	MB	SC	SS
No	2	10	1	5	4	9	3	1
Yes	0	11	1	5	4	15	4	6
Unassigned	0	0	1	0	0	1	0	0
Total	2	21	3	10	8	25	7	7

Key:
- AR Arts
- CS Computer Science/IT
- CA Creative Arts
- ED Education
- HS Health Sciences
- MB Management/Business
- SC Sciences
- SS Social Sciences

Note, N= 83 for this table as some interviewees did not align with one department so were excluded from this table.

Table 4.10: Providing feedback in electronic form directly in the body of the assignment compared to faculty.

Many interviewees use tools for providing electronic feedback in the body of assignments. Microsoft Word's track changes and the Adobe Acrobat Professional's PDF commenting tool are the most popular means of doing so. The use of such tools seems very much based on the individual. There was no correlation between faculty, level or class size and the use of these tools. In fact, the percentage using these tools

(~ 50 %) remains the same across all faculties except the arts and social sciences in the sample population (Table 4.10). This indicates that tracking tools do have widespread application possibilities.

An interesting dichotomy exists between those using an electronic repository for assignment feedback and those who do not (Table 4.11). A few interviewees voiced their concern about such feedback – that it leads to homogenised comments and fails to provide 'personal' guidance. Conversely, some see efficiency, consistency and educational benefits in using electronic feedback comment repositories:

R71: I think it might just ease moderating a bit, to try and be consistent and also it's quick and dirty if you will, to cut and past comments if you've got, you know, folks who are making the same error.

R31: My observation is, that were you annotating and adding comments electronically, that there is probably a tendency to provide more feedback to students rather than less.

The effectiveness of electronic repositories is linked to class size. With increasing class size the time-saving benefits multiply. The use of repositories of feedback comments reflects this (Table 4.12).

Yes	32
No	33
Unassigned	23
Total	88

Table 4.11: Do Lecturers use an electronic repository of frequently used feedback comments?

	Class size			
Uses an electronic repository	0 to 10	11 to 40	41 to 100	101<
No	3	18	5	4
Yes	4	5	10	10
Unassigned	1	12	4	5
Total	8	35	19	19

Table 4.12: Use of electronic repositories of feedback comments compared to class size

One surprising discovery was that 51 interviewees do mark on paper to some extent. This seldom means they mark exclusively on paper and generally refers to certain assignments lending themselves to hardcopy marking. Marking on paper seems to be a personal preference and is not directly related to class size, faculty or paper level (Tables 4.13, 4.14). The number marking on paper does not decrease as class size grows due partly to the increase in marker use for larger classes (Table 4.15).

The primary motivation for marking on paper was unanimously the 'feel' and 'look' of paper and the ease in providing 'inline', context based comments. Of those marking on paper a significant number transferred the feedback into an electronic form by either typing in or scanning to PDF. The advantages those interviewees marking electronically saw included improved consistency, better legibility of comments, efficiency gains and reduction of the 'paper-trail'.

	Class size						
Mark on paper	*0 to 10*	*11 to 40*	*41 to 100*	*101<*	*Unassigned*	*Not Applicable*	**Total**
No	3	17	6	9	1	1	37
Yes	5	18	13	10	3	2	51
Total	8	35	19	19	4	3	88

Table 4.13: Lecturers marking on paper compared to class size.

	Level of the course				
Mark on paper	*A mix of under/post graduate*	*Postgraduate*	*Sub-degree*	*Undergraduate*	**Total**
No	8	7	5	17	37
Yes	7	13	3	28	51
Total	15	20	8	45	88

Table 4.14: Lecturers marking on paper compared to paper level.

	Class size						
Use Markers	*0 to 10*	*11 to 40*	*41 to 100*	*101<*	*Unassigned*	*Not Applicable*	**Total**
No	6	20	8	5	2	0	41
Yes	2	15	11	14	2	3	47
Total	8	35	19	19	4	3	88

Table 4.15: Use of markers compared to class size.

The use of electronic tools for assisting in quality control and tracking of marking is limited to about a third of interviewees (Table 4.16). Twenty-six mentioned that they use such tools for quality control, many of these pointing out that simply having the assignments in an electronic form eased moderation and quality control:

R2: If electronically submitted then we can moderate each other's work.

Issue	Yes	No	Unassigned	No Markers
Tools used for quality control of one's own marking	26	42	20	
Tools used to track marking status of assignments	29	40	19	
Tools used to manage markers	21	26		41
Electronic tools used for moderation	13	29	46	

Table 4.16: Use of tools for quality control, tracking marking and moderation.

Forty-seven interviewees use markers, of these twenty-one use tools to manage them such as shared drives or open access databases (Table 4.16). Some incorporated flags into the LMS to organize the allocation of work to markers and indicate the marking status of assignments. Once markers had returned their results the LMS, spreadsheets or databases can be used for moderation:

R18: I also double check any assignments that have extremely high and extremely low marks, particularly fails so they all get checked just to make sure that that's on track and if any marker goes, particularly up or down between their first and second or third assignments then I check those as well.

When asked 'what do you find most challenging in providing feedback to students on assignments?' the resounding response was 'time'. 'More time' was the key motivating factor in lecturers making the switch from paper to electronic marking. Lectures widely acknowledged the importance of feedback and accept that it takes time to do well. They did not necessarily want to reduce the total time spent on marking assignments just the time spent on administration tasks thus leaving more time for providing the personal 'feedback that counts'. Legibility of comments, reduction of the paper trail and departmental pressure to keep up with colleagues were secondary factors.

4.4.6 Keeping Records

Electronic means was by the far the most popular way to record and analyse marks with 85 interviewees doing so. Of these a large number double entered or transferred marks into other systems (Table 4.17). This was generally at the end of the semester and from personal spreadsheet records or the LMS system to the Universities' central systems. Interviewees did recognize efficiency benefits from having the results in electronic/spreadsheet form when it came time to transfer them into another system. Several voiced concern about the lack of interoperability between the LMS and the central grades database.

A few interviewees mentioned that they erase, or 'clean-up', all assignments at the end of each semester. Seventeen though, mentioned purposely keeping historic records of marked assignments and saw benefits in marking and moderation from doing so:

	Transferring marks into other systems			
Method for recording and analysing marks	No	Yes	Unassigned	**Total**
Electronic	3	65	17	85
Paper	1	1	1	3
Total	4	66	18	88

Table 4.17: Method for recording and analysing marks and the numbers transferring marks into other systems.

R72: It's also quite handy, just occasionally I like to refer to the previous year or the one before that while marking. It enables me to get some sort of check especially when you've only got a small group, to see how they compare with stuff that was done last year. So it's very handy to have the whole thing and with my comments.

4.4.7 Providing General Feedback to the Class

General feedback provides the class with the key assignment issues and a basis for analysis of their own work and self-improvement. Fifty survey participants spoke

about providing general feedback and brought up a range of different approaches, some utilising electronic repositories, assignment records or quality control tools to supply general feedback:

R71: Sometimes I give sort of general statements back to everybody and then their specific statements and in the general statement I'II say things like I noticed a number of people were having difficulty with such and such and then point them to a tutorial online or attach something, you know, a PDF summary.

R70: By looking at the pattern of responses, I can actually give an overall formative assessment to everybody, saying 'most students didn't get this right', and then I'll give a guideline as to where they can go to in the textbook, or refer to a lecture or something like that.

4.4.8 Releasing Results and Feedback to Students

The release of assignment results and feedback followed a pattern similar to that of submission (Table 4.18). The electronic methods, consisting of email, LMS and specialist systems, outweigh the returns by paper. A combination of paper and electronic means was the single most favoured method for returning assignments and marks. The common procedure was to publish the marks on the LMS and make the assignment documents, annotated with detailed feedback, available either online, through email or pick-up.

LMS	20
Specialised systems	8
Email	23
Paper	10
Paper and electronic	27
Total	88

Table 4.18: Method used for returning assignment marks and feedback

If a lecturer receives an assignment through LMS or by email this does not necessarily mean return by the same method. Twenty-nine interviewees used an LMS for

assignment submission, but only 20 for returning of assignments. The popularity of email increased from 15 interviewees for submission to 23 for return. Assignment return by paper increased compared to paper submission as a result of lecturers printing electronically submitted assignments for marking. Return method had no relation to class size but was related to course locality and faculty (Tables 4.19 and 4.20). For the sample population assignment return via LMS was the favoured method by computer science, email return for social sciences and a combination of paper and electronic for physical sciences, art and business/management. As with submission the method used for return is determined by the assignment type.

	Course locality		
Return method	Campus	Campus and distance	Distance
Electronic	17	10	23
Paper and electronic	11	6	9
Paper	6	3	1
Total	34	19	33

Table 4.19: Return method compared to course locality.

	Faculty							
Return Method	AR	CS	CA	ED	HS	MB	SC	SS
Email	0	7	0	3	2	5	0	4
LMS	0	9	0	1	0	7	0	0
Paper	0	2	1	2	3	2	0	0
Paper and electronic	2	2	0	3	3	9	4	3
Specialised systems	0	1	2	1	0	1	3	0
Total	2	21	3	10	8	24	7	7

Table 4.20: Return method by faculty.

Specialised systems were popular in the social sciences and the creative arts where assignments were often graphically intensive or involved interaction and simulation. Systems allowing online critiques and digital exhibitions for the creative arts and event simulations for the social sciences were specialised systems talked about.

Email return was popular for a number of reasons. Participants mentioned that email allowed them to return assignments as soon as they are marked as a ‘reward for those being punctual’. Others found ‘rattling off’ an email with the assignment and

feedback attachment quicker than uploading to the LMS. Some liked email so that they 'know the students are getting the feedback'.

Many lecturers were concerned that students were not bothering to collect or read assignment feedback, just logging on to the LMS to see the grade. Literature indicates that written feedback providing constructive criticism and guidance has much more educational benefits than the mark/grade. Butler (1988) suggests that feedback should be released before marks. Only nine interviewees return feedback before marks. The way in which results are released on the LMS means that students see their marks before the feedback, contravening recommendations from the educational literature and potentially causing students to focus only on marks:

R11: When they see their marks online, they don't see the feedback ... normally they get the grade and, in my experience, many of those students don't often read all the feedback you write. They look more at the grade. So I'm not sure if having a grade in a different place to where the feedback is, I'm not sure if they look at the feedback they get.

Several interviewees mentioned that due to the submission and return possibilities email and learning management systems provide there is pressure from students to provide faster response – another factor influencing mark before feedback return:

R86: I guess one thing I have noticed with the use of electronic things, either email or the online campus in general is that I think students are tending to expect things to come back more quickly.

One of the seven principles of good feedback (Nicol and Macfarlane-Dick, 2006) is to encourage teacher and peer dialogue around assignments and learning. The vast majority of interviewees allow, and often encourage, students to discuss their marks and feedback. Sixty-eight, spread equally across all faculties, levels and class sizes do so and many rate it as a high priority:

R83: I've always believed in some degree of quite intense personal face-to-face feedback if you can do it.

R44: I still have the face-to-face with them about lots of other things, so before they start writing, we go over their outline together in an individual meeting …so I'm still getting lots of time with them.

While many interviewees allowed students to discuss assignments and question marking decision very few (6) talked about employing electronic tools for assisting in the appeals process. Of those who did mention tools, having electronic access to the marking guide and all students' assignments on hand was beneficial in addressing appeals:

R30: If there are any disputes I've got a copy of assignments on archive that I can refer back too.

Yes	48
No	7
Unassigned	33
Total	88

Table 4.21: Provide an opportunity to close the gap.

The importance of facilitating self-assessment and providing students with the opportunity to close the gap between current and desired performance is well documented (Sadler, 1989; Nicol and Macfarlane-Dick, 2006). This can be through resubmission of assignments, feedback on drafts, further exercises to address deficiencies or time to reflect on feedback. Over half of the interviewees provide students with such opportunities (Table 4.21).

R5: Particularly if they missed some key point that they've lost significant marks for, I make sure that they get that incorporated in the subsequent assignments.

R60: I give them something that most of my colleagues find very strange, I give them a period of one week after they get their feedback through Blackboard … and I tell them look at your assignment, really engage with what the marker had to say about your work and if you think that is not accurate, you write a two or three pages reply to that take into account what you learned from this assignment and from the feedback and you come to me and give me this paper and explain.

4.4.9 Using the Assignment Experience for Future Teaching

The issues relating to using the assignment experience for future teaching were seldom prompted for directly in the interview. However, participants did speak on the subject, voicing some insightful views and practices for using student work in assignments to inform future teaching. Based on the results of previous assignments interviewees were increasing emphasis on certain areas, scheduling extra lessons, setting 'practice' exercises and altering future assignments to reinforce key points that were missed:

R22: I can also convert assignments into a learning thing for myself as to which are the areas that need further explanations.

R46: I can sometimes go back with some students particularly with the essay and if I think they're having some problems or something I can go back to their other assessment and think well they seem to have this consistent problem and so I can give better feedback.

R38: I look and if I see every single student's not referencing properly or, you know, missing the point of synthesis then I try and emphasise that more for the next time. Also because they do reflective journals and things I go through them with a fine tooth comb as well, looking for how I can do things better the next year. I keep everything from previous years.

In many of these cases it was electronic tools and the archiving of assignments on computers that made accessing, comparing and analysing student work possible. Not all lecturers made alterations to lesson plans or assignments – a few were worried that course content/presentation or assignments did not evolve overtime as much as they should:

R11: The assignment's we set don't change as much as they should year to year. I think the thing is to use pretty much the same assessments from year to year. I think that's partly because they're not checked by someone external each year to make sure things are changing … so that there's no pressure to do so.

5 Conclusion

The interviews provided anecdotal evidence and 'real-world' examples of electronic tools being used in the assignment process. Survey participants recognise the benefits of technology in the marking and management of assignments. These range from increased efficiency to more educationally effective approaches. Participants also identified benefits for the students such as saving time and reducing printing costs by electronically submitting, increased legibility of feedback comments and the educational advantages of online discussion forums.

The issues analysis indicated that lecturers are concerned about good learning practice, quality and efficiency. Comparing survey participants' practice with Nicol and Macfarlane Dick's 'seven principles of good feedback' (2006) showed that the majority of lecturers are fulfilling these. Interviewees are clearly clarifying assignment goals and criteria, delivering quality feedback, allowing, and often, encouraging student/teacher dialogue and providing students with the chance to close the gap.

The survey identified a range of approaches to assessment. There is a core set of electronic tools such as email, word processors, spreadsheets and learning management systems that participants are experiencing both efficiency and quality benefits from using. In the sample the use 'first level' technology, LMS, discussion forums, email and track changes is high with over ~ 90 % utilizing these tools. The extent to which 'secondary level' or more specialised tools for plagiarism, quality control, moderation etc. are applied is limited (~ 33 %), even amongst this enriched sample. Despite the prevalence of LMS, submission and return of assignments by this method was not the most popular. The favoured approach was to use a combination of paper and electronic means. This reflects the fact that 'paper' assignments are still widespread; 51 of the interviewees in the sample set still mark on paper to some degree.

The choice to use tools and technology has more to do with the individual than with faculty, class size, course level or institution. Clearly, not everybody is comfortable reading/marking on a computer screen and many enjoy the benefit's that paper provides (familiarity, mobility, ease of providing 'inline' comments). From this data

set there is little evidence of departmental or institutional pressure to switch to electronic technology. Motivation must come from the individual. There are clusters within some faculties where a ‘culture of technology’ exists where often an ‘early-adopting’ or ‘technology-minded’ person leads the uptake of new technology, sometimes even designing their own system. This eventually trickles down to the other staff members.

The survey identified several areas in which improvements could be made. Participants using technology often feel that there is a lack of support from their institution. This highlights the need for a support framework. The existing technologies and practices are not perfect. Several interviewees voiced frustrations about using electronic submission and many take extra steps to prepare electronically submitted assignment for marking.

Lecturers wishing to integrate electronic tools into the assignment process will be faced with learning some new technologies, acquiring some new skills and slightly altering their current practices. However, the learning curve is not too steep and in the sample set, once the tools had been adopted, lecturers definitely did not want to revert back to a traditional paper based approach.

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Appendix A – Interview questions and questionnaire

Questionnaire
The interviewer will provide a brief overview on the project goals and give a definition of 'essay-type' assignments that are the focus of the interview.

Q1 Think of a course or paper where you use e-learning tools for assignments.
What kinds of things do you use?
How do you use such tools?
What is your view of these tools?

Probe questions

- Do you use any tools to help:
- Learners submitting assignments;
- Preparation of marking: downloading/collecting, who marks what, how to communicate marking criteria to markers;
- Marking: commenting, recording marks, keeping notes to oneself;
- Bookkeeping: storing of marks, transfer into other systems (which ones?);
- Return of marked assignments: assignments themselves, marks, feedback sheets, sample solutions, summaries;
- Interaction with students after release of marks: communication.

Q2 What are the advantages for the teacher?
What are the advantages for the student?
What are the disadvantages for the teacher?
What are the disadvantages for the student?

Q3 What are your criteria for selecting these tools?
How did you find out about them?

Q4 Think of other courses or papers where you do not use such tools.
Tell me a little about why this is so?

Q5 Do your departmental colleagues use these e-learning tools?
What factors seem to influence their choice to use them or not?

Q6 What do you find most challenging in providing feedback to students on assignments?
How can these challenges be resolved?

Q7 What tools would you like to have to support the marking of assignments?
What are the barriers to this happening?

Q8 Fill in a very short questionnaire.

Q9 Any other comments?

Questionnaire given to lecturer at end of interview

Lecturer's name _____

What is your discipline? _____

How many years have you taught in tertiary education?

Less than 3 years	
Between 3 and 10 years	
10 years or more	

In the interview you discussed a course that uses some tools to help manage or provide feedback to students. Answer the following questions on this course. If more than one course was discussed fill in a form for each course.

How is the course presented to students?

Internal campus based course	
Distance or extramural course	

Does the course use a learning management system such as WebCT / Blackboard or Moodle?

Yes	
No	

What level is the course?

Undergraduate	
Postgraduate	
A mix of undergraduate and postgraduate	
Sub-degree	
Trade qualification	
Other (Please specify)	

Appendix B – The list of possible themes that arose from the initial summary

Time

- Time is a commodity
- Time taken
- Time available
- Tasks that need time – learning to use tools, time for good feedback.

Issues

- Technology diffusion
- Training
- Plagiarism
- Marketing
- Communication – voice
- Administration – double handling, centralised edicts

Technology purposes (DACOM)

- Giving / receiving information
- Problem solving
- Instructions
- Maintaining relations
- Bargaining
- Competing resources

Teaching and learning

- Student benefits
- Student views
- QA
- Incidental learning
- Discipline specific

Diffusion

- Significant others
- Publication
- Courses and events

Support

- Staff
- Institution
- Students

Future research

- Students
- Use of feedback
- Assessment design
- fairness

Needs

- stated
- implied

Assessment concepts

- Learning outcomes, Marking scheme, feedback, quality checking, aid into teaching.

Professional development

- Expressed needs
- Perceived needs
- Longer term

Motivation

- Efficiency
- Pedagogy

Benefits

- Effective
- Efficient

Links to literature review

Tutors - consistency Myths

Real life examples

Students

- Demands
- Impact learning, satisfying demands

Tools

- Management
- Marking

Data management

- Successes and failures
- Espoused theory – what should do
- Theory in practice – what really do
- Critical instance - evidence

Appendix C – Summary of the participant's answers to the interview questions

This summary of the responses is from twenty interviews. An initial summary was made of the first ten interviews and later another ten were used to verify the summary. The interview schedule is available in Appendix A.

Q1. Tools/techniques used for marking and management

The majority of participants use a learning management system to some degree. Often this was to collect and return assignments, provide grades to students with various class statistics, and use the discussion board and email facility to communicate about the assignments. Generic software including Microsoft Word tracking and comments features and Adobe PDFs were used for annotating assignments or providing general comments. Specialist tools were also used, including Turnitin tools the lecturers themselves or their departments had designed. Participants had spreadsheets, databases or other tools that they customised for there courses.

A. Learners submitting assignments

In terms of submitting assignments, most of the participants setup a learning management system for their students to submit assignments. One lecturer suggested it depended on the length of the assignment whether it was handed in online or in hardcopy, and longer assignments were required to be handed in hard copy (in this case the 'long' assignment was more than 500 words). Another lecturer used online submission only for a certain assignment for which a visual basic programme had been written to assist marking. Some participants required students to hand in a hard copy and to submit an electronic copy.

Most of the participants provided the students electronic versions of information about the assignments, templates and marking schemes. Some had online discussions to clarify the objectives and ensure the students knew what to do. Participants were divided about providing marking schemes and other information at the start of the process with a minority view to not provide a marking scheme enables students to work it out for themselves.

B. Preparation of marking

Preparation of marking took a number of forms, which depended on the nature of the assignment and the individual course. For those who used a learning management system, generally the markers downloaded the assignment. All of the participants had marking schemes although the detail in them varied. Courses with large numbers of students had marking teams with extra organisation to ensure that all markers were prepared and knew the marking criteria.

C. Marking: commenting, recording marks, keeping notes to oneself

For those who used a learning management system, the student assignments were downloaded and returned to the student using the assignment tool. Comments are generally on a PDF or Word document. Often feedback was written on a scoring rubric created in Word, or a summary sheet or marking sheet created in Word with comments and grades. Some participants returned these to the student via email. All of the participants who used email taught courses with smaller class sizes. If tutors were marking the assignments were generally marked and returned to the student by the tutors, and a few may be checked by the lecturer before being returned to the student to check that marking was consistent with how they wanted it.

D. Bookkeeping: storing of marks, transfer into other systems

Generally those who mark on a learning management system keep a copy of the comments that are given to students. Sometimes marks are entered into the learning management system, a spreadsheet, and the organisation's centralised system for recording marks. A number of participants mentioned that this process was frustrating as there is no link between the learning management system and the organisations' centralised system, which resulted in the marks having to be entered multiple times.

R10: No I do it all manually. So again I print my master spreadsheet out and I'll just have with a ruler, just go through and transcribe them. I think there ways to sort of convert spreadsheet material to you know directly to an [organisation's centralised system] file or at least import them. But again you know the maximum number of students is usually only 30 and I just find it just as easy to just do it manually.

R5: I can look at the submissions and do a bar graph and say okay there's that you can get means and standard deviations and all that's just there, but [the organisation's centralised system] provides you with none of that. You know basically it's a just number entry mechanism and you put some formulas in which generate a grade. So it's missing a lot of that and to me it would be very nice to have some level of automation.

E. Return of marked assignments

Those participants who used a learning management system would upload the comments and grades and make it available for the students. Some would use the comments box to place comments, and some would upload the word or PDF documents back to the student on WebCT. One lecturer also included audio comments.

Other lecturers who didn't use WebCT would post the marks back to the students by post or by email and one would send the hardcopy back to the student and also post the marks on WebCT so they could see their grades.

F. Interaction with students after release of marks

Generally participants commented that communication would be conducted by email after the release of the marks, but this did not happen very often. Alternatively, students would come to see the lecturer, and a few students may mail comments, but this was rare. Some participants send students summary class comments and incorporate them into their standard communication channels. This may be an online newsletter, discussion board or in the lecture for campus based students.

R3: You can put comments, ask questions of the students so that in the end you have a series of little marker icons all the way down the assignment and when the student opens it they can click at the top and there is an up down clicking system that let's them move up and down the comments and so they can look at what you have said and they often come back and say I disagree with you on that or whatever yeah, but they don't do it often.

Q2. The advantages and disadvantages of using e-tools

A number of common themes emerged in response to the question of what the advantages and disadvantages of using e-learning tools for marking and managing assignments were. Advantages and disadvantages were identified both for teachers and students. Also disadvantages of using e-learning tools were identified.

A. Advantages for teachers

The advantages for teachers of using e-learning tools for assignment marking centred around two main themes. Firstly, a range of administrative advantages were identified, and secondly advantages were identified for plagiarism detection.

In terms of administration, the use of e-learning tools such as WebCT or the Turnitin system were identified as reducing administration issues around the hand in process, reducing problems around writing legibly, promoting a faster turnaround, with the advantage that a copy can be kept for later reference.

Assignments that are submitted to a learning management system were discussed as having the advantage of providing a record of the time that the assignment was handed in. This can prevent possible problems of misplacing assignments or attempting to record the correct time that students handed their assignments in that can occur with paper hand ins.

R4: They are all in one place, they are on WebCT and you know where they are and are time stamped so you know when they have arrived. The student can see that they are there so there is nothing about claiming that it has been lost somewhere along the way which is good. And you know where they are, you know when they arrived and it makes things much easier.

R5: The students submit it, I get them and there's a clear one to one correspondence. They're well labelled with their ID numbers so I don't have to make a cross check onto there. I can process them and away it goes. So that to me was the most significant advantage of it.

Participants identified that providing feedback online reduces the problem of students not being able to read a lecturers handwriting, as type written comments are legible and clear. Furthermore, references to resources can easily be provided directly to students in the form of links to articles and books. A faster turn around time can also

be facilitated, as assignments can be marked and returned to the student immediately, saving time on trying to distribute all the assignments in class or arrange pick up times, as some students never pick up their assignments. In addition to this, one lecturer commented that giving feedback online meant more time could be spent giving feedback to a student rather than on administrative issues that may be necessary with paper hand-ins.

R3: Is it helping the students in their education? It probably makes me more prone to put more comments on things - you are probably aware of the assignments that are tick, tick, tick, tick, B-, but why is it B-? You have made no comments anywhere - that easy care way of marking that people adopt. The fact that I can just sit there reading it and comment on it at the time and it is readable to them and I can sort of say what I am thinking at the time, I think gives them more, I am giving them more feedback than I would maybe give if I was marking by hand.

Lecturers commented that having an electronic copy was useful so it could be referred to later if the student had queries about their feedback. It could also be kept, with the advantage that there was no need to photocopy assignments or to have to deal with large amounts of paper. This was also a factor that was useful when screening for plagiarism.

Detecting plagiarism was another issue that was mentioned as a major advantage of using e-tools. Having the assignment in electronic form means it can be cross checked against past year's assignments and current assignments, and Turnitin can also screen for quotations from text books.

R3: The advantage is that it allows you to easily see what material has come from where, or from other students previously using a textbook quotation so it does pick up textbook quotations at times. So the advantage is that it picks that up.

B. Advantages for students

Advantages for students of submitting and receiving assignments using e-learning tools included convenience, a faster speed of turnaround, and reduced cost. It was suggested that more feedback could be provided, and it could ensure that the same information was available to all students, improving their learning experience.

For students, submitting assignments online gives them the convenience of being able to work until the assignment is due and submit it just before a deadline. Due dates can also be more flexible. In addition to this, they can receive feedback faster than traditionally waiting for all assignments to be marked and then picked them up from a certain location.

R5: From the students' perspective, they like the control that I give them to the absolute last minute to submit it onto there. So if they want to submit it midnight on Sunday, no problems, they can do that. So I leave it to the last minute. They get clear feedback that it has been submitted and it has been received so they like that feature. They also like the fact that they can, when the things been graded they can immediately have a look at their results. They don't have to go to a noticeboard to find out it's posted, it's in there so those are you know strong plusses that they like.

R8: I think from a student point of view, firstly speed. I mean there's no substitute for getting your assignment, marked assignment back on the same day, that's just completely blows them away. They think wow.

Other advantages for students are that they don't have to print their assignments, which can save them money, particularly if they are required to print colour photographs and images. Also students were able to peer review some types of assignments and further felt more part of a learning community.

R36: But the great advantage, well I mean they get the reviews from their peers which is great but the other thing is that they feel like they are part of a community and that was a really big issue for me when I was setting up creative writing courses.

One lecturer also mentioned that using e-learning tools also exposes the student to a new learning experience, and it also provides equal opportunities for extramural students and internal students to access the same information online, rather than benefiting the internal students who come to classes. In addition to this, it was commented that using e-tools can lead to a more individualised process of feedback and more flexibility around dates for handing in assignments that leads away from the traditional batch type assignment process.

C. Disadvantages to teachers

Two main disadvantages for teachers were recognised, including the initial start up process, and reading on screen. Starting up and spending time learning how the tools worked was reported to be a disadvantage of using them, as initially this process may take longer than already practised methods.

R5: Disadvantages for teacher. Well I guess there's the getting started. As I say I've sort of been holding off on using WebCT for quite a while because I was very familiar with COSER so I went through the sort of learning curve and I'm onto there and although I'd done a basic course on it, you still don't necessarily know the best way to do certain things. So I think probably the site for the second semester paper was more refined than the first one, but it grew, so I think it's just the getting started element into there.

In addition to this, reading on screen was mentioned as one of the drawbacks of using e-tools to mark assignments. In particular, it was suggested that this problem may be greater if you have a larger class or larger sized assignments.

R8: I mean marking on screen can be a bit of, some people don't like it. They're just not you know they've come from a generation before computers and so I think and it is nice to be able to sort of you know have a pile of papers and work off the papers. I mean I can see the advantages of that but I think that would be a disadvantage for some people. I think I have tended to get into the habit of trying to mark or work, read off screen rather than printing off paper but at times I do print it off and take it home, but then with large papers, like 100 students or something, you then get to the point of well, who's going to cover the cost of that printing and how's that going to be achieved.

D. Disadvantages to students

One disadvantage of using e-learning tools was for students who did not have access to the net, particularly extramural students who missed out on online forums that are only accessible online. However, few disadvantages of using e-tools were identified.

E. Disadvantages of the system

One disadvantage of the system was the fact that there is no uplink between the organisation's centralised system and the learning management system, so marks have

to be entered twice. One lecturer also expressed concern about intellectual property rights using a plagiarism checker and the question of confidentiality. For Turnitin the assignments are stored by a company in America. Another disadvantage that was recognised was the fact that the learning management system has no public interface, so people who are trying to find out about the course who are not enrolled in it can find very little information online.

Q3. Criteria for selecting tools

The overwhelming response to the question of how tools were selected was that the organisation encouraged the use of the tool and there are no other options. Motivation to use a tool was based on the support that an organisation provided. The participants would use a tool if the organisation provides it, supports it use and keeps it going. Most of the participants did not have the time or the interest to do this. Others selected the tools that they knew so there was no learning curve.

Another criterion mentioned was the need to improve the time taken to return assignments by enabling the collection of assignments online.

For those who use other tools, such as Turnitin, the criteria for selecting it included that it was made available in the department and other people were using it. For those who use PDFs and Word, their criteria for using them were for ease of use and security and privacy. Finally, for the small number of people who had constructed their own tools, they were constructed on the basis of what students and lecturers needed for the particular course.

How did you find out about them?

People found out about the tools because they are the systems used at the organisation and they have attended courses for them. Some participants found out about tools from discussions with departmental colleagues.

Q4. Courses or paper where tools are not used

The reasons why participants did not use tools in certain papers centred around four main reasons: practicality, not being a decision maker, needing more ideas for how it would be possible, and a lack of support by the university.

Firstly, practical reasons were given for not using e-tools for some courses, for example, for large course sizes over 100, e-learning tools were not used as it would be a large job to individually upload marked assignments for return to the students. Others suggested that they could receive assignments online but that these were too long to read on the screen, and therefore it was more practical to ask the student to print assignments rather than the lecturer having to print them and cover the cost of paper and ink. It was also thought to be easier to mark smaller courses by hand rather than using e-tools as it was thought to be faster this way. Others in design type courses commented that some work, such as studio work would be difficult to do online. Finally, it was easier to provide written feedback to some postgraduate students who handed their drafts in for feedback on hard copy.

R9: There's actually a simple economic, financial reason for not asking students to submit assignments for my other papers which is that I do grade by long hand and I'm not willing to print out the bits of paper that would coming to me and that some of these courses they have to submit two copies because we moderate the Post Graduate papers. So the thought of printing out two copies of a twenty page research essay, there is a factor about just transferring costs around here and tutors have brought that up with me that if they find that if they receive something by, a submitted assignment by email, they're printing it out. Each time it prints it takes something like three pages to print it because WebCT prints the quiz question as well as the answer. They've [the tutors] asked for more money, a sort of small amount of money to buy a couple of reams of paper and so one reason is financial.

R9: The other one's to do with the nature of the assignment. I just find them too long to read on screen.

The second reason some participants gave for not using e-tools for some assignments was that they were not the decision maker for a particular course, and therefore didn't have the influence or the time to encourage the use of e-learning tools.

Thirdly, some participants suggested that they have tried to use e-learning tools and would like to know more about how they could be used, but they do not see how it would work and need more education in this area.

R8: We don't really use any form of electronic assessment process for these papers. It's not for sort of want of trying though and over the last few years and as part of sort of trying to make more use of electronic technologies for teaching, particularly, I mean almost exclusively in electronic mode because really that's, sorry in extra-mural mode because that's where both sort of [organisation name] is you know it's where it really ought to be or should be and it is kind of a dominant provider in New Zealand, certainly in tertiary education.

Finally, one participant suggested she was not supported by the university using e-learning tools in a particular paper. Another participant implied that familiarity and confidence in using e-learning tools needs time and support to develop.

Q5. Use of e-learning tools by departmental colleagues and factors that influence their choice

The number of participants who had departmental colleagues who used e-learning tools varied. Some stated that no other colleagues used them, and others were encouraged to use them by other members of the staff.

One of the common reasons for not using e-learning tools was a lack of knowledge of the existence of some specialised e-learning tools, a lack of knowledge of how to use them, and a lack of support for their use. This indicates a lack of a coordinated approach to the promotion and use of e-learning tools in some institutions. As a result of this many lecturers felt uninformed about the types of tools available, their function, and particularly the advantages to themselves and their students.

It was suggested that some staff were too busy to take the time to learn how to use them. There was also a perception among some colleagues that it would take a lot longer to use e-learning tools to assess than paper methods.

R1: Generally speaking I think that people don't use the tools because they are not comfortable about technology, although we are sort of viewed as the technology department but actually it is not entirely the case because there are people who are in more management [positions]

R5: You do need to spend a reasonable amount of time upfront setting it up, getting it looking how you want and then getting familiar with the process of using it and that is an investment you have to actively choose to do on to there to get the

benefits on the other side and a lot of people just haven't quite made the step to put that in and so they're using the processes, they'd probably work adequately in the past, not realising that they could have some benefit - and it's not just benefits to them, there's benefits to the students which is I think the bit they don't necessarily see.

A second reason that was offered for departmental colleagues not using e-learning tools was that they preferred to stick with the existing system they were using, and the only time that they would change this would be if they were building a new course or drastically revising an old one. In addition to this, practical problems such as not wanting to read on the screen were identified, and it was suggested that some topics were more difficult to use e-learning tools for. Further, if markers from off campus were used, it was recognised that they may not have access to the learning management system, which may limit the practicality of using this tool.

Thirdly, a number of participants mentioned that they did not know what other colleagues used and there was not a lot of communication between them on the matter of marking.

R10: It's a difficult question to answer and think you'll find most academics would struggle with it because most of us don't know what each other does, I mean there's very few forums to talk about it and there's even less interest in it.

Encouragement within the department and by other colleagues and heads of schools were mentioned as reasons why there has been uptake of e-learning tools in some departments.

R6: the head of our department is very, very keen to, for us to increase and improve our web capacity and our involvement with offering on the web. So he's encouraging that.

R6: We have discussed it to a certain extent so that's another thing that does encourage us - and also I see one or two other colleagues using them. But it is really time, getting to know them, getting to know their potential.

Finally, reasons for uptake of e-learning tools by departmental colleagues included that they recognised the convenience and utility of the tools, in particular for submitting assignments and for plagiarism issues.

R8: You know they've got particularly hot about plagiarism and so they're using that anyway so it's kind of doubled as an electronic submission tool.

Q6. Challenging aspects of providing feedback to students on assignments and how these can be resolved

Providing effective feedback that is clear and unambiguous was a significant challenge to all. The reasons were not always the same but two main challenges to providing feedback to students were mentioned. The first was that the time available to prepare effective feedback was severely limited. The second challenge was dealing with the limitations of e-learning tools, such as the fact that providing feedback online can often change the format of a student's essay and make it difficult to read. Technical challenges, although often mentioned, were not considered as significant as the time challenge.

One of the largest challenges of providing feedback to students was balancing the time taken to provide quality feedback to students with other demands of a lecturer's workload. This factor is further complicated by the fact that the length taken to provide good quality feedback may not always be worthwhile as many students may not take much notice of the feedback they receive. Therefore, a challenge is ensuring that students look at feedback and that it is provided in an appropriate way. Providing a balance between feedback which is specific and tailored to an individual so that a student can understand why they received the mark they did, and also providing bulk general feedback that could be useful to most students was a particular challenge.

R1: the most challenging aspect is to determine how much feedback is actually going to be used by the students because if you were trying to somehow define it, if you provide feedback for everyone it is not possible and not economical, one cannot do other things that we do at the same time and it also would be senseless because I believe that many students just ignore it. They just see the mark and they are happy and they have other things to do.

R10: providing good feedback takes time. ... academics are always pulled with their time. [They think] that they should be spending more time on research or writing a paper or doing something else.

A number of lecturers mentioned that it is difficult to gauge how feedback is used by students. Participants perceive that some students do not take any notice of the

feedback given and typically it is the students who would most benefit from engaging with the feedback that do not. It was mentioned that a system could be provided in which detailed feedback could be provided to those students who want it. Others mentioned that the way to resolve this problem may be to provide general feedback on a cover page, and then more specific feedback in the margins throughout the student's assignment. Tools such as MarkTool were also mentioned as ways to possibly resolve meeting the balance between giving individual feedback and giving broad general feedback, as it provides a way to copy and paste comments from a bank of comments for individual students. One respondent reported that they had contrived ways of encouraging students to read the feedback by being evasive when asked questions that had been covered in the feedback. Respondents did not speculate as to the reasons for this lack of engagement and therefore, with the one exception, no motivational techniques were discussed.

Participants noted that they are coming under increased pressure to reduce the time between the submission of an assignment and delivery of feedback.

Technical issues associated with the use of software were mentioned but seemed to have a lower priority than other issues. Comments on technology did include criticism of the level of tracking and systems integration available to staff.

One technical issue was the fact that online feedback could often be messy and change the format of the student's assignment, which may make it difficult to read. In addition to this, limitations of tools were also mentioned. For example, one lecturer mentioned that they were using the find and search tool in word to search for specific key words in assignments, but this was long winded and that there must be a better way to do it.

R9: When you're providing feedback online, especially if you want to write a reasonable amount, that it becomes quite a complex document if you're putting insertions into the student's work or side comments. What I've done in the past is keep their answer complete so that they can see what they wrote, then reply with something that is sort of semi edit in a way. So I could imagine that reading that from the student's perspective is potentially a bit confusing because you have effectively a sort of an edited paragraph or and edited answer.

Another challenge of providing feedback was reading long assignments such as theses. Due to the length of these documents, people often find them easier to read and give feedback on a hard copy. However, if the student lives in another country then the challenge is providing feedback to them in an appropriate form. Often this becomes a longwinded process as the document is read in the hardcopy but feedback is given online, which may involve making references to page numbers and line numbers. This was a problem in particular for courses that use mathematical notation. However, a resolution was using Latex, although a lecturer still found it easier to mark theses on the hardcopy instead if possible.

R4: But most of my comments in general are scrawled down the side, suggestions as to how to rewrite things on the paper. ... If you want to read an entire thesis on the screen, your eyes start to go funny, so having paper is good.

Written feedback was not always seen as the most effective method. A conversation may be more effective. Others felt that there must be tools that can be developed to provide a better balance of feedback that was easy for the lecturer and the student to access. Some mentioned the benefits of combining textual, audio and video feedback for students.

R5: There's clearer opportunity for tools to help in the automation of this and my feeling is that a more media interactive or more media rich feedback with a combination of textual, audio and some video conferencing or something where I can actually point at things, would be really, really nice. You know and if that was so easy that it would be no more different than me spending ten minutes pointing and talking to them, then that would be fabulous because it's taking me that long to type things in on to there, so all we're saying is you know we just move it into a more free form and it probably wouldn't take me any longer but the students would get you know get better feedback and they can review it. They can go back through and oh yeah that's what he's talking about.

R8: most of all I think if I could then attach a short audio file saying this is well developed and you needed to just maybe explore X or you know just add, it would add to the sort of the intimacy of that relationship and it would actually mirror the kind of thing that you're trying to develop.

Q7. Tools to support the marking of assignments and barriers to this happening

There were four main areas in which participants expressed the need for tools to support the marking of assignments, and a variety of barriers to preventing this from taking place.

Participants recognised that the learning management system did not meet all of their needs and suggested a tool would be useful to make feedback more user-friendly and tailored to an individual student's needs. This included tools suitable for non-essay type assignments which required multiple file submission that identified file suffixes. Other participants would like easier ways to fill in forms, such as using radio buttons, as well as having a bank of comments to choose from and using them when marking an assignment and giving feedback.

R4: anything that makes WebCT easier is good. Anything, particularly downloading things from WebCT is reasonably easy but putting them back up one at a time is a nuisance, it's that end which is important and I guess if something that enabled some of the commenting to be automated and put down, then everything has been made easier yeah. You could put my effort into the marking and the bureaucracy that goes with it, would be good.

A number of participants discussed wanting to incorporate more media into feedback, including audio, video conferencing. Some participants wanted to provide audio feedback while others liked the ability to review typed comments and easily make changes. The barriers to this were perceived to be networks may not handle large uploads.

Participants also mentioned that there needed to be more integration between the institution's systems, as often some people would use one tool, and others another, and also there was a need for systems to link together better. For example, a number of people suggested that it was frustrating that the organisation's centralised database and the learning management system did not link up. Lecturers need to enter marks into two systems.

Barriers included not knowing how to make a tool that would make this possible. It was also mentioned that a tool that would make detecting plagiarism better would be if textbooks and newspapers could submit their material so that student's assignments could be checked against them.

Citing the need for more screen space, participants wanted larger screens or two screens. They recognised that they would need to work on a number of documents at the one time such as the student assignment and the marking assistant software. Others wanted tablet computers which would recognise handwriting or electronic paper.

Appendix D – Issues Checklist

All attributes have not applicable options as well as those listed.
Y = Yes, **N** = No, **U** = Unassigned

1 Supporting students with assignments
- **(Y / N / U)** Clarify what is good performance; perhaps show what good performance is
- **(Y / N / U)** Allow students to discuss the goals so that they understand them
- **(Y / N / U)** Make electronic communication part of the assessment
- **(Y / N / U)** Use tools to communicate with students about the assignment

2 Submission of assignments

Method used for submission of assignments;
(LMS / specialised systems / Email / Paper / Paper and electronic / CD or DVD)

3 Preparation of marking
- **(Y / N / U)** Prepare electronic submissions for marking
- **(Y / N / No markers)** Use tools to organise markers
- **(Y / N / U)** Do lecturers print assignments?
- **(Y / N / U)** Use tools to check for plagiarism

4 Marking
- **(Y / N / U)** Use an electronic repository of frequently used comments
- **(Y / N / U)** Provide feedback in electronic form directly in the body of the electronic assignment document
- **(Y / N / U)** Provide feedback with general comments at end of student assignment
- **(Y / N / U)** Provide feedback in electronic form separate to the assignment document
- **(Y / N / U)** Do lecturers mark on paper?
- **(Y / N / U)** Use tools to assist with the quality control of one's own marking
- **(Y / N / U)** Use tools to keep track of the marking status of assignments
- **(Y / N / No markers)** Use tools to manage the work of markers
- **(Y / N / U)** Use electronic tools to assist with moderation

5 Keeping records
- **(electronic / paper)** Record and analyse marks
- **(Y / N / U)** Transfer marks into other systems
- **(Y / N / U)** Keep historic records of marked assignments for more than one year

6 Releasing results and feedback to students
- **(Y / N / U)** Lecturer provides general feedback to the class about performance of the class in general
- **(Y / N / U)** Return electronic assignment copies annotated with feedback
- **(Y / N / U)** Return feedback and then marks
- **(Y / N / U)** Do lecturers discuss the marks and feedback with students or provide opportunities for the students to do so?

Method used for returning marks and feedback to students;
(LMS / specialised systems / Email / Paper / Paper and electronic / CD or DVD)
- **(Y / N / U)** Provide opportunity to close the gap
- **(Y / N / U)** Use electronic tools to assist the appeals process

7 Using the assignment experience for future teaching
- **(Y / N / U)** Extract examples of student work for future teaching
- **(Y / N / U)** Use the assignment experience for future teaching
- **(Y / N / U)** Analyse strengths and weaknesses across all assignments

Appendix E – Issues: good practice summary

Introduction

This appendix presents an outline of the stages in the marking and management of assignments. In each stage there is a description of the issues and a summary of good practice from the literature concerning the issue. A summary of the issues is in Appendix D.

This document assumes the following:

- There can be one or more markers.
- The assessment design phase is complete and the design has gone through any review processes to get it into the implementation phase.
- The technical system is reliable, backed up and can recover from a failure.
- Authentication is not an issue. We assume that the person who submits the assignment is who they say they are.
- Peer and self assessment is not covered.

The issues with good practice

1 Supporting students with assignments

1.1 Issue: Clarify what is good performance

Good practice

As Black and Wiliam, Hattie and others have identified, feedback can be made less time consuming and more effective if the nature of the work to be done and the criteria for evaluating how well it has been done are well understood by the students before the work is begun. This requires good explanations by the teacher, and preferably time for the students to explore and discuss the criteria. It is particularly helpful if the teacher can make available examples of similar work at different levels of quality, to illustrate the qualities that are being sought (Sadler, 1987, Yorke, 2003). With these conditions in place, the feedback can be much more focused, aimed at

fine-tuning the students' understanding of the desired qualities and how to adjust their work to better exemplify those qualities.

Nicol and Macfarlane-Dick (2006) emphasised that good feedback practice involves clarifying what good performance is in terms of goals, criteria and standards. Effective assessment should help students to understand what is required of them when submitting assignments and appreciate what high quality work looks like. Furthermore, it has been suggested that assignment criteria needs to be clearly linked to learning outcomes, and analytic or holistic scoring rubrics should be developed and made available to students before an assignment is due to give students a clear idea of what is expected of their assignment (Gronlund, 2006; Hanna & Dettmer, 2004; Linn & Miller 2005; and Nitko, 2004b).

1.2 Issue: Allow students to discuss the goals so they understand them

Good practice

As outlined in 2.1 students need to understand the goals and criteria for achieving them. As well as good explanations by the teacher, students need to explore and discuss the goals and criteria (Gronlund, 2006; Hanna & Dettmer, 2004; Linn & Miller 2005; and Nitko, 2004b).

1.3 Issue: Make electronic communication part of the assessment

Good practice

Communication tools such as wikis, blogs, photoblogs and online discussion can be assessed. Assessment will direct student activity with greater time and effort given if the electronic communication is assessed (Goodfellow & Lea, 2005).

1.4 Issue: Use tools to communicate with students about the assignment

Good practice

Online discussion forums allow students and tutors to exchange information and viewpoints. This can be particularly important on distance courses where face to face discussions may not be possible.

2 Submission of assignments

2.1 Issue: Electronic submission of assignments

Good practice

Plimmer and Mason (2006) as well as Edwards and colleagues (2002) emphasise the advantages of electronic submission and handling of assignments. They list issues like the ease in collection of student work, the removal of geographic limitations, the reduced risk of lost work, the time and resource savings if printing is not required, the long-term availability based on the ease of storage of electronic artefacts, and the efficient return of marked student work.

Stephens, Sargent, & Brew (2001) suggest features tutors would need in an ideal computer marking and management tool. Among the items suggested is the support of all types of submission including electronic student submission of various file types.

The assignments could be submitted by learning management systems, specialist assessment systems or email.

3 Preparation of marking

3.1 Issue: Prepare electronic submissions for marking

Good practice

Stephens, Sargent, & Brew (2001) suggest features tutors would need in an ideal computer marking and management tool. Among the items suggested is electronic storage of marked work and lecturer's comments, marks and annotations. The types of activities that lecturers may do electronically are: moving files, checking that all students have submitted, sorting files, renaming files, sharing files.

3.2 Issue: Use tools to organise markers

Good practice

Electronic systems that assist teams mark and manage assignments are available (Baillie-de Byl (2004); Campbell, 2005; Denton, 2003; Edwards, Fernandez, Milionis, & Williamson, 2002; Moreale, Whitelock, Raw, & Watt, 2002; Plimmer & Mason, 2006; Wells, 2006; Zhang & Heinrich, 2005a, , 2005b). These systems vary in their

approach but many allow lecturers to do the following: sharing the marking criteria, allocating assignments, allocating notes, double marking to help consistency and preparation of markers.

3.3 Issue: Do lecturers print assignments?

Good practice

It is essential that suitable e-systems are available that are efficient and easy to use. A complete approach must be offered that not only covers assignment submission and management but as well the actual marking process (Jones, Cranston, Behrens, & Jamieson, 2005). If this is not the case staff are faced with the decision of either to print student work and mark on paper or to use unsuitable tools for the marking of the electronic assignment copies. Printing out assignments will be a time consuming activity and will reduce the benefits of using technology.

3.4 Issue: Use tools to check for plagiarism

Good practice

Academic dishonesty and plagiarism occur frequently in tertiary education (de Lambert, Ellen, & Taylor, 2006; Parameswaran & Devi, 2006) and are more common in essays and programming assignments (Alam, 2004). Detection systems along with telling students what academic dishonesty is, and promoting values that institutions want, are recommended ways to manage this issue (de Lambert, Ellen, & Taylor, 2006; Macdonald & Carroll, 2006). Submitting work electronically will allow the use of detection systems. Some systems allow students to submit work to the detection system for checking so they can act on the feedback the detection system highlights before submitting the work for marking and human feedback.

4 Marking

4.1 Issue: Use an electronic repository of frequently used comments

Good practice

A comments bank that is easy to edit and develops during marking will help lecturers mark (Stephens, Sargent, & Brew, 2001).

4.2-4.4 Issues:

- *Provide feedback in electronic form directly in the body of the electronic assignment document*
- *Provide feedback with general comments at end of student assignment*
- *Provide feedback in electronic form separate to assignment document*

Good practice

Electronic marking systems need to facilitate commenting on multiple levels, 'inline', on specific issues and as a summary. Students ask for feedback that addresses their work in totality as well as on specific issues. They want specific comments placed directly on their work in the page margins (Orsmond, Merry, & Reiling, 2005).

Adobe Acrobat Professional (Adobe, 2006) allows comments to go directly into PDF documents. This is good as the comments are placed in separate textboxes that are visible right beside their reference points in the essay, without changing the essay layout. It is not possible to inadvertently modify the student's work. Additionally, the comments can be hidden from the essay view and comment summary pages are available. The appropriateness of a tool depends on the specific marking situation and personal preferences.

Some claim that students do not read feedback (Wells 2006). Black and Wiliam (1998) suggest giving students their grade after they have acted on the formative feedback.

4.5 Issue: Do lecturers mark on paper?

Good practice

To enable the benefits of technology markers should mark electronically. A very practical issue relates to the readability of handwritten comments. Students have difficulties in deciphering the handwritten comments put on their work (Blayney & Freeman, 2004; Bridge & Appleyard, 2005; Higgins, Hartley, & Skelton, 2002). Typed comments are easier to read and, if looked at on screen, have the additional advantages of various display sizes and of searching and sorting.

4.6 Issue: Use tools to assist with the quality control of one's own marking

Good practice

The advantages of such tools in general to assist tutors include: improved legibility (Bridge & Appleyard, 2005); staff can edit the feedback as they work through the assignments (Bridge & Appleyard, 2005); markers individually marking an assignment can check feedback and identify if it has changed as the marking proceeded (Barrett & Luca, 2002; Campbell, 2005); the tools can save tutors time in the marking and management of assignments (Baillie-de Byl, 2004; Denton, 2003).

4.7 Issue: Use tools to keep track of the marking status of assignments

Good practice

Electronic tools such as learning management systems can handle bookkeeping and storage. Systems are available that that can handle assignments that consist of multiple files and an efficient return of marked assignments to students.

4.8 Issue: Use tools to manage the work of markers

Good practice

The instructor and their marking team need to work together closely as a team to achieve marking that is reliable and high quality. Even a simple electronic environment facilitates this teamwork and brings huge advantages compared to a paper approach. Tools allow the lecturer to allocate assignments to markers, compare markers feedback and marks to help ensure consistency and identify markers progress. Some tools allow markers to add comments to each assignment that will not form part of the feedback given to the student. This will assist the markers in organising the marking process. That means, a marker can write a note, indicating the status of the marking. This can be used to manage the sequence of the marking, e.g., each essay question at a time, or to convey information like 'review again' or 'check with co-marker'. If holistic marking is used the common sorting of essays into 'piles' can be simulated via the comments. This presents a convenient way of modifying the marking sequence for multiple passes through the assignments.

4.9 Issue: Use electronic tools to assist with moderation

Good practice

Tools can help streamline moderation between markers and also help individual markers maintain consistency. For instance for double marking of assignments it is simple to copy an assignment and make it available to different markers and then compare comments. Tools help marking teams to be consistent as the markers can see each others comments.

5 Keeping records

5.1 Issue: Keep historic records of marked assignments for more than one year

Good practice

Keeping records will help allow lecturers to shape the teaching for the next cohort of students.

5.2 Issue: Record and analyse marks

Good practice

Electronic tools are available to record and track assignment details. These can help lecturers with class lists, the marks and other information about the student assignments. It is often possible to link to other systems and automate some administration tasks.

5.3 Issue: Transfer marks into other systems

Good practice

Easy links to university central systems is an important feature in an ideal computer marking and management tool (Stephens, Sargent, & Brew, 2001). Software such as a marking system will not work in isolation and should be compatibility and interoperability with existing systems such as student records. (Jafari, McGee, & Carmean, 2006).

6 Release results and feedback to students

6.1 Issue: Return electronic assignment copies annotated with feedback

Good practice

The importance of feedback needs to be emphasised. The marker should provide feedback to each student, outlining strengths and weaknesses in their work and guiding towards further learning (Linn & Miller, 2005; Nitko, 2004b; Torrance & Pryor, 1998; Tynjala, Mason, & Lonka, 2001). Individualised feedback that provides detailed information on the quality of an answer is mostly given in conjunction with a scoring rubric (Nitko, 2004b). The benefits of electronic return of assignments include were listed earlier and include the efficient return of marked work, legibility of comments and the ability to integrate with the package of benefits that using an electronic system offers (Plimmer and Mason (2006), Edwards et al (2002)).

6.2 Issue: Return feedback and then marks

Good practice

There is preliminary evidence that the mere presence of summative information on student work (such as a grade or a mark) diverts student attention away from the more detailed comments provided. There are numerous reports, from teachers and students, that students often pay little attention to specific feedback if a mark or grade is also provided. These reports are accompanied by a few tantalising pieces of research. Black and Wiliam (1998a) cite the research of Butler (Butler, 1988), who found little learning benefit from feedback that consisted of marks alone or marks together with written comments, but substantial learning benefit where the feedback consisted solely of written comments.

We suggest that feedback should be sent first and then marks later. The reverse may reduce students motivation for looking at the feedback.

6.3 Issue: Lecturers discuss the marks and feedback with students or provide opportunities for the students to meet with lecturers.

Good practice

Nicol and Macfarlane-Dick (2006) emphasise the importance of learner self-regulation. One of the seven principles of good feedback practice is encourageing teacher and peer dialogue around learning.

6.4 Issue: Return marks and feedback in electronic form

Good practice

The benefits of electronic return of assignments include were listed earlier and include the efficient return of marked work, legibility of comments and the ability to integrate with the package of benefits that using an electronic system offers (Plimmer and Mason (2006), Edwards et al (2002)).

6.5 Issue: Lecturer provides general feedback to the class about performance of the class in general

Good practice

Students learn from individualised feedback that outlines their strengths and weaknesses and guides them towards further learning (Linn & Miller, 2005; Nitko, 2004b; Torrance & Pryor, 1998; Tynjala, Mason, & Lonka, 2001). However general feedback can be useful. Handley and Cox (2007) identified that students preferred generalised feedback that identified what to avoid, how to think through the problem and key issues that provide a framework for thinking. Handley and Cox suggest that there is a danger than model answers could give the impression that there is one right answer which is not always the case. Students may also rote learn the model answers rather than use the feedback in more educationally effective ways. However, model answers can be useful if the student has to do something with them, such as use the model answer to mark their own or others assignments.

6.6 Issue: Provide opportunity to close the gap identified in the feedback.

Good practice

This could be resubmission or building in time to reflect on feedback or excises on what they will do for the next assignment.

Nicol and Macfarlane-Dick (2006) emphasise the importance of learner self-regulation. Among their seven principles of good feedback practice is providing the opportunity to close the gap between current and desired performance.

Sadler (1989) argued that self-assessment is a vital component in learning. He said that if students were to be able to improve, they must have the capacity to monitor the quality of their own work during its production. Feedback on assessment cannot be effective unless students accept that their work can be improved and identify important aspects of their work that they wish to improve. If students are asked and encouraged to critically examine and comment on their own work, assessment can become more dialogue than monologue, and can contribute powerfully to the educational development of students.

Orsmond et al. (2005) report that a number of students read and reread comments. The students keep their marked assignments so that they are able to refer back to the feedback provided to them by their teachers. Electronic documents can be conveniently stored and electronic copies of marked assignments can facilitate students in referring back to previous work. While this is possible in principle with standard file storage systems a lot more could be done is assisting students to create annotated repositories of marked work.

6.7 Issue: Use electronic tools to assist the appeals process

Good practice

Providing evidence is an important part of the appeals process. Tools that store marks, feedback and the student work will help the lecturer explain to students why they got their marks and what is required to get better results.

7 Using the assignment experience for future teaching

7.1 Issue: Extract examples of student work for future teaching

Good practice

These examples will allow future students to clarify the assignment criteria and to help identify what is expected. The students who did the work would need to give their permission for its use in future teaching.

7.2 Issue: Use the assignment experience for future teaching

Good practice

The storage of feedback will help lecturers review comments. They can look for common misconceptions that can help refine the assignment for future students. McKenzie (2004) proposes to use e-systems to support markers by allowing the marking team to access to each other's marking comments. This allows newer staff to learn from more experienced colleagues and has the additional benefit of this learning occurring in a discipline specific context.

7.3 Issue: Analyse for strengths and weaknesses across all assignments

Good practice

Collecting all feedback the marker can identify strengths and weaknesses of answers across the whole class. This information can be used as a guide for further teaching (Nitko, 2004b).