Interpretation of Results of the Survey 'E-learning tools in support of marking and management of essay-type assignments'

Conducted at Massey University in June 2006

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Executive Summary

A survey on 'E-learning tools in support of marking and management of essay-type assignments' was conducted at Massey University in June 2006. The purpose of the survey was to examine the use of e-learning tools in support of marking and management of essay-type assignments at Massey University, with specific focus on the WebCT assignment tool and two applications developed at Massey, MarkTool and WebCTConnect.

The survey revealed a very low percentage of WebCT use for assignment submission and return of about 10%. The results showed that hardcopy submission, and therefore marking and return, is dominant, that for the majority of assignments the students have to submit in multiple formats in parallel, that very little advantage is taken of electronic environments for assignment management tasks and that hardly any advantage is taken of electronic environments for the actual marking tasks.

Up to 60% of the survey participants saw potential in the applications MarkTool and WebCTConnect for supporting their marking. Staff expressed their willingness and desire to use electronic tools for assignment marking. Named as requirements for increasing the uptake of such tools were the need for supportive university policies and guidelines, improved information on tools available and adequate training programmes.

Survey Analysis and Interpretation

1.   Survey Parameters and Responses

The invitation to participate in the survey was sent directly to two Massey University electronic mailing lists. 'webctowners' contains addresses of 'owners' of WebCT papers who are subscribed automatically. This list has 962 subscribers. 'www-teach' is a list for Massey staff interested in teaching. It has 221 subscribers. The two lists overlap. The invitation addressed anyone involved in the marking of assignments. Recipients were encouraged to pass on the invitation to others involved in the marking process.

Additionally the invitation was sent to an email list of Massey university secretaries with request for distribution in their units.

The instrument of the survey was a web-based questionnaire. A cover sheet explained the purpose of the survey and dealt with the ethics requirements. The participants were informed that the data provided by them would be stored anonymously. Appendix A and B replicate the information sheet and the questions used.

The invitation to participate was sent out in Week 13 of Semester 1 2006. The idea was that at this time participants could look back at their assignment marking of Semester 1. Over a period of about four weeks 103 participants filled out the questionnaire. The questionnaire was divided into three parts. The first part contained general questions on tool use, the second part assignment-specific questions, and the third part concluding questions. The second part could be repeated for multiple assignments and two participants did so.

A wide coverage of subject areas was achieved. The participants were asked to state the subject areas of their assignments. The responses were made at a variety of levels of detail and include at least the following subject areas: biology, business studies, chemistry, computing, education, engineering, finance, geology, history, languages, management, mathematics, microbiology, psychology, statistics, veterinary science. The responses indicate that the participants were distributed well across the colleges of the university.

2.   General Knowledge and Use of E-Learning Tools

The initial part of the questionnaire asked participants about their knowledge and use of e-learning tools for assignment marking in general. Table 1 provides the responses in numbers.

Table 1: General Knowledge and Use of E-Learning Tools

Number of respondents: 103	**WebCT Assignment Tool**	**MarkTool**	**WebCTConnect**
"Don't know the tool"	63	84	87
"Know the tool"	40	18	16
"Have used the tool"	11	1	7

WebCT has been the university's official learning management system for many years. The university's Training and Development Unit (TDU) runs courses for staff that include the assignment tool. The lack of familiarity with the WebCT assignment tool (less than half of the respondents know the tool) and use of the tool (only about 10% of respondents said they use the tool) is surprising.

A correlation of the responses to the general use of the WebCT assignment tool and other questions allows argumenting for both higher and lower usage figures. In a later question in the assignment specific section of the questionnaire 16 respondents said that they were using the WebCT assignment tool for student submissions. 25 respondents checked the option of using either the WebCT assignments tool or the WebCT 'my grades' tool for returning marks. Only 8 of the 16 and 9 of the 25 respondents had indicated in the general section that they were using the WebCT assignment tool. In part of this discrepancy could come from the separation of the questionnaire into general and assignment specific sections. Another possibility is that respondents initially did not recognise the WebCT assignment tool by name but

remembered its specific features later in the questionnaire once prompted. Overall the figures suggest that, with optimistic interpretation, up to 25% of participants use the WebCT assignment tool.

The picture of usage looks quite different when combining the answers on use of the WebCT assignment tool in the general section of the questionnaire with the statements on responsibility for the assignment selected. Of the 11 respondents who stated that they use the WebCT assignment tool only 5 said later on that they were responsible for the assignment they reported on. Considering that only the person overall responsible for an assignment can setup the use of the WebCT assignment tool and that about 80% of respondents were in this position of responsibility this leads to an overall use of the WebCT assignment tool of 6% in relation to assignments and not individuals involved in the marking. A further factor that could require assuming a lower overall number of users could lie in the sampling for the survey. The notification was sent to a mailing list of WebCT 'owners' who by definition are involved with WebCT. It therefore can be assumed that a survey among the academics not among the WebCT 'owners' would lead to even lower usage figures.

These considerations provide a lower boundary for the use of the WebCT assignment tool of about 6% and an upper boundary of about 25%.

In light of the low number of WebCT assignment tool users the numbers for MarkTool and WebCTConnect are encouraging. MarkTool and WebCTConnect have not been promoted by the university as official tools. While the tools have been mentioned in TDU training courses there have been no actual courses covering the tools. MarkTool and WebCTConnect are advanced tools that imply the use of the WebCT assignment tool (or, in the case of MarkTool, any other form of electronic assignment submission). Following from the low use of the WebCT assignment tool higher figures for MarkTool and WebCTConnect can hardly be expected.

Massey University employs around 1,400 permanent academic staff. Most of these will be involved in assignment marking. Additionally, graduate assistants and casual markers are employed for dealing with assignments. One can assume that at least 2,000 people are involved in the marking of assignments at Massey. Based on the number of 103 survey participants a rough estimate of total tool users can be gained by multiplying the numbers given by the questionnaire by twenty. This calculation leads to potential current user numbers of 20 for MarkTool and 140 for WebCTConnect users. These figures seem to be too optimistic as the website download statistics for the applications suggest about half of these user numbers. A possible cause for the difference is the sampling of participants.

3.   Assignment and Marking Characteristics

For the second part of the questionnaire the participants were asked to think of one specific assignment and answer the following questions with this assignment in mind. The participants had the option of repeating this part of the questionnaire for another assignment. Two participants did so, leading to a total of 105 responses for this part of the questionnaire.

Role of Respondent and Single/Team Marking

The first set of questions aimed at gaining an understanding of the role of the respondent in regard to the assignment and if marking of the assignment was a team effort. Just over 80% of the respondents had overall responsibility for the assignments. In all but two cases the respondents marked at least some of the assignments themselves. In nearly exactly half the cases others were involved in the marking of the assignments. Table 2 shows the distribution of the answers to these questions in relationship to each other. The number of responses in rows four and eight had to be zero as a 'no' to both marking columns would not make sense. This was the case in the results and indicates that the respondents gave sincere answers. Team and single marking was distributed equally both for the answers of respondents with and without overall responsibility.

The fact that half of the assignments were marked by more than one person suggests that e-learning tools for the marking of assignments should offer support for teams of markers. In was good to see that in basically all 80% of the cases where the person responsible for the assignment answered the questions this person marked at least some assignments themselves. In the 20% of the cases, where the person answering was not responsible for the assignment, half were only marked by one person (row 6). The answers in row 5 indicate that others were involved in the marking, but it cannot be seen from the answers if this includes the person responsible. Together this means that in 10-20% of cases the person responsible is not themselves marking assignments. While a closer investigation needs to be undertaken this could indicate a potential problem in ensuring the quality of the assignment marking.

Table 2: Role of Respondent and Single/Group Marking

	Overall responsibility for the assignment	**Marked at least some assignments themselves**	**Others were involved in the marking of assignments**	**Responses**
1	Yes	Yes	Yes	39
2	Yes	Yes	No	44
3	Yes	No	Yes	1
4	Yes	No	No	0
5	No	Yes	Yes	9
6	No	Yes	No	10
7	No	No	Yes	1
8	No	No	No	0

Assignment Features

The next question investigated what features, in terms of document format, the student answers contain. While basically all assignments contain text just under 1/3rd of assignments contain only text. The vast majority of assignments contain text in combination with other features. Table 3 shows the distribution of features. As examples for 'other' feature types were given programming code, spreadsheets, presentation slides and performances. The item 'performance' presumably refers to a live presentation, whereas all the other features are, or can be converted into, electronic documents.

The dominance of text but as well the frequent use of other features is not surprising, especially when considering the wide range of subject areas related to the assignments. The strong presence of non-text features emphasises that any electronic assignment marking program must have corresponding display and comment formats. A tool that restricts itself to a text-only environment would be severely limiting.

Table 3: Features Present in Assignments (Sample Size 105)

Feature	Count
Text	103
Images	29
Graphs/diagrams	58
Formulae	23
Audio	1
Video	4
Other	10

Number of Submissions

The participants were asked to provide the approximate number of student submissions for the assignment. For analysis purposes the responses were grouped. Table 4 shows the distribution. The minimum number of submissions was 1, the maximum 1500 and the average 81. About 80% of the assignments attract more than 20 student submissions. Even a fairly simple tool such as the WebCT assignment tool makes the administration effort around assignment marking much more efficient to handle. Looking at the fairly low use of the WebCT assignment tool there is lots of scope for improvement in this area.

Table 4: Distribution of Number of Submissions (Sample Size 105)

1 – 9	10 – 19	20 – 49	50 – 99	100 - 199	200 – 499	500 +
3	19	30	29	16	3	3

Group Assignments

About 20% of the assignments were group assignments. While group assignments generally reduce the total number of submissions they require additional steps in the management process. With every 5th assignment being group work an electronic assignment tool should provide specific features in support.

Assignment Submission

The participants were asked to select the submission formats for their assignments. Table 5 shows the responses. Named as 'other' submission formats were ProLearn, Turnitin, web submission and visual recording. It is interesting to note that for a sample size of 105 the total number of 'ticks' made to indicate submission formats was 160. Submission for more than half of the assignments occurred parallel in more than one format. Some assignments required even more than two ways of submission. While for some assignments multiple submission formats might be necessary based on their content, it can be assumed that this is not true for the majority of cases. Table 6 provides a cross-reference of submission formats. This analysis shows, for example, that more than half the hardcopy submissions were accompanied by parallel electronic submissions. Historical evidence, gathered outside this survey process, gives several explanations for this situation. One explanation is the lack of trust in electronic systems with the fear of electronic documents getting lost or being inaccessible due to format mismatches. Another explanation lies in marking requirements where some parts of an assignment need to be executed (this applies to computer programs) but others are commented on with hand-writing.

For close to 70% of the assignments one of their submission formats was electronic. Interestingly, email submissions are more than twice as strong as submissions to the university supported specialist tool of WebCT. The numbers of student submissions for assignments with email submission were higher than the submission numbers across all assignments (minimum 7, maximum 1,500, average 109). Considering the administrative effort required of dealing with assignments submitted via email the lack of use of the more efficient WebCT assignment tool is surprising. One explanation, collected outside the survey but confirmed in some of the comments made by participants, is the policy of Massey University of not allowing assignment submission via the WebCT assignment tool for extramural papers.

Table 5: Ways of Submission (Sample Size 105)

Ways of submission	Count
Hardcopy	91
Floppy disk/CD/DVD	11
WebCT assignment tool	16
Email	34
Other	8

Table 6: Cross-Reference of Submission Formats

	Hardcopy	Floppy disk/CD/DVD	WebCT assignment tool	Email	Other
Hardcopy		10	10	30	5
Floppy disk/CD/DVD	10		3	6	0
WebCT assignment tool	10	3		2	1
Email	30	6	2		5
Other	5	0	1	5	

Release of Results to Students

Basically all participants reported that the students were provided with feedback on their assignments. This finding is very positive.

The participants were asked to select the ways in which marking results are returned to students. Table 7 shows the answers. Named as 'other' ways of returning results were ProLearn, summary documents via websites and email.

Interesting, but not surprising based on the results already reported on, is the dominance of paper-based methods of returning results. Without the use of proper electronic marking tools the release of results in electronic form is difficult to achieve. Email naturally does not feature much as the sending of individual emails with marking results to students is a time consuming and error-prone task.

In releasing results to students the type of information released and the confidentiality of this information must be considered. Typically a student should receive a mark (or grade) and individual feedback. The return of assignment hardcopies and marking sheets allows for both feedback and marks to be given. Assuming these hardcopies are handled properly this preserves confidentiality. The WebCT assignment tool also allows for feedback and marks. This tool protects privacy as access to information is password protected. The WebCT 'my grades' tool only allows for marks to be returned. It preserves confidentiality. The display of class lists with marks in public places, via hardcopy or websites, protects privacy only in limited form as some information, normally the student id number, must be displayed along the marks.

In just 11 cases assignments were both submitted and results released via WebCT.

Table 7: Ways of Release (Sample Size 105)

Ways of release	**Count**
Via a hardcopy display (like printed list on notice board)	14
Via hardcopies of their assignments returned to them	81
Via hardcopies of marking sheets returned to them	37
Via the WebCT assignment or "my grades" tools	25
Other	10

4.   Features of MarkTool and WebCTConnect Regarded as Useful

The participants were presented with a list of features of MarkTool and WebCTConnect. Depending on their earlier answers on usage of the tools, the participants were asked which features they found useful or would regard as useful. Based on the small absolute number of participants who had used the tools this analysis focuses on the responses of the participants who had not yet used the tools.

Table 8 shows the responses linked to MarkTool, Table 9 gives the results for WebCTConnect.

The figures indicate strong interest in nearly all features of the tools. For MarkTool the features can be divided into three groups. The first group (items 1 – 4) deals with the formative aspects of the assignment marking. More than 60% of the participants showed interest in these features. The second group (items 5 – 7) contains features important for the return of marked, electronic scripts to students and bookkeeping of marks for the whole class. These features were seen as important by 40 and 50% of participants. The last group (item 7) refers to the feedback loop from marking back into teaching. The idea behind this MarkTool feature is that the lecturer/marker studies all comments made across all assignments to discover trends and inform

further teaching. This feature could as well be used as part of a quality assurance process when working with multiple markers. The questionnaire gave no detailed explanations on this feature yet 20% of respondents recognised the potential.

Table 8: Potentially Useful Features of MarkTool (Sample Size 104)

	Feature	**Count**
1	Definition of a marking scheme	59
2	Writing of feedback directly on the assignment pages	66
3	Writing of an overall comment on the summary page	63
4	Collection and use of frequently-used-comments	59
5	Saving of marked assignments as PDF documents	41
6	Export of marks into an Excel or CSV file	50
7	Export of detailed feedback into an Excel or CSV file	21

The features of WebCTConnect fall into five groups. The first group (items 1 – 3) deals with the handling of assignments after student submission in preparation for marking. Support for these items stands at 20 – 40%. A more detailed analysis shows that 50% of respondents who allow students to work in groups are interested in the feature of detecting group membership. The second group of features (items 4 – 6) are concerned with the actual formative marking. It is positive to see that these items received the strongest support of about 50%. The third group (items 7 – 10) contains features for the return of results to students and for the bookkeeping of marks. These features are seen as interesting by close to 40% of respondents. The only item in the group scoring lower at 20% (item 9) is an item specifically designed for the tracking requirements for extramural papers. This connection might not have been important or obvious for many respondents. The next group (items 11 and 12) relates to the work of marking teams. An earlier question has shown that half of all assignments are marked by more than one marker. Interestingly, the about 30% support for the importance of a feature supporting communication with markers in the same among participants with and without marking teams. The last group (item 13) deals with connecting the two applications MarkTool and WebCTConnect. This received support in about 25% of responses.

Table 9: Potentially Useful Features of WebCTConnect (Sample Size 98)

	Feature	Count
1	Download of assignments from WebCT	39
2	Automatic zipping/unzipping of files	32
3	Detection of group membership	22
4	Definition of a marking scheme	47
5	Filling out the feedback sheet for individual students	52
6	Writing comments to yourself during the marking	33
7	Upload of marks and comments to WebCT	39
8	Upload of marked assignments to WebCT	36
9	Export of submission data into an Excel or CSV file	21
10	Export of marking results into an Excel or CSV file	35
11	Allocation of multiple markers	20
12	Communication with markers (sending/receiving marking schema or marking data)	29
13	Import of marking data from assignments marked with MarkTool	23

5.   Use of Other Tools to Support the Marking of Assignments

10% of participants stated that they had used other applications besides WebCT, MarkTool and WebCTConnect to support their marking. Table 10 provides the details. It needs to be assumed that many more participants are using generic applications like word processors and spreadsheet programs for the preparation of documents and the storing of marks. It seems that ProLearn is used in similar ways as WebCT for the management of assignments and marks. There are only some references to the use of tools for the actual marking process. Turnitin for plagiarism detection, word processing for writing comments into the assignments directly (the respondent describes the use of highlighting and fonts to distinguish their comments from student work), a database of frequently used comments and Tomboy for taking notes.

Table 10: Other Tools Used to Support the Marking of Assignments

2 references to Turnitin[1]; Plagiarism detection and Grademark online marking
2 references to ProLearn[2]; grade book function and communication with students
2 references to spreadsheet programs;
3 references to word processing programs; writing comments in student assignments and writing of feedback sheet
1 reference to self developed marking database with frequently used comments
1 reference to Tomboy[3] for writing notes to oneself during the marking process
1 reference to Blackboard; (used at a different institution)
1 reference to the WebCT discussion board; (not used for assignment marking but for peer-feedback on presentations)

(1)   Turnitin is the plagiarism detection program supported by Massey University.

(2)   ProLearn is the name of a programme funded by the European commission that develops tools for the area of technology enhanced professional learning (http://www.prolearn-project.org/).

(3)   Tomboy is a desktop note-taking application for Linux and Unix (http://www.beatniksoftware.com/tomboy/).

6.   Concluding Remarks by Survey Participants

To conclude the questionnaire the participants were given the opportunity to make comments on the applications MarkTool and WebCTConnect and e-learning tools for the marking of assignments in general. Table 11 provides all substantial comments on MarkTool and WebCTConnect in unedited form. Removed were only the remarks by participants stating that they could not comment as they did not know the tools. The comments fall into the following groupings:

-    Positive feedback after use of the tools;

-    Interest to find out more about the tools and recognition of potential;

-    Need for training to learn use of the tools;

-    Problem of investing time into the learning of new tools;

-    Mentioning of specific problems during use;

-    Recommendations for the development of new features.

Table 12 provides all substantial comments on e-learning tools for the marking of assignments in general in unedited form. Three main themes can be extracted from these comments:

-    The tools in this area are inadequate.

-    Massey University's policies and support structures are inadequate.

- MarkTool and WebCTConnect are very promising developments.

After filling out the questionnaire more than half the participants provided their email addresses to receive updates on the development around the applications MarkTool and WebCTConnect and/or to be contacted for follow-up questions. The email addresses were stored separately from the survey data.

Table 11: Comments relating to MarkTool and WebCTConnect (as provided by participants; the web process used truncated long comments)

Sounds like it could be very useful - once we have learned how to operate it, if it is a reliable system (ie no electronic failures!) and if it links directly with other systems in the university, e.g. recording of marks, WebCT etc. Submission electron
No - wasnt aware of them. Ive used the plagiarism detection tool, Turnitin, & found that useful but quite time consuming to upload assignments & manage the process. (Since NSATS put the workload back on to course coordinators, I havent used it.) I try to
When I looked at this it was not available to me because I am a contractor and use the Mac OSX operating system.
I would lkie to see a connection between WebCT and Massey's RPS system in MAS.
Have found tool successful and well recieved by students. A few students did not find marked file which was unusual. Good to have marked copy of assignment on hand and return time much faster.
At this stage I have little use for such a tool as few of the assignments/essays I give my students lend themselves to the features listed. I have my own marking schedule sheet on which I write comments as I go through the assignment. When the marking is
I am new to this and probably haven't used WebCt as well as I might.
We seemd to have a problem where late assignments came in but that could be inexperience on our part with the tool. As code is not in the essay arena the mark tool was difficult. The WebCTConnext for downloading and uploading was most useful.
I think it will be really useful for another paper later this year where the tutor marking the exam is overseas.
I haven't used these. My only experience was to have students submit assignments via MOODLE. I then marked these with track changes and filled out an evaluation report that I emailed to them. This worked well with a small group.
Well actually I do not know anythoing about it.So It would be helpful to first be told about these tools. Both papers (…) are web CT supported but I do not post marks on the web page (why should I) as the students get their assignments back w
Have not used them but some of the available features may be useful.

I have no experience of either of these tools but think they could be very valuable for both students and lecturers.
i haven't really looked at them. I am now somewhat motivated to try them, but as always, time is a major barrier to trying something new-- even if that something new may in the end reduce time marking.
Best function of WebCTconnect is to down/upload assignments (and un/zipping) into local folder.
Sound benefical but would have to be educated about its use
I have been unaware of these tools, but this questionnaire has whetted my appitite. Will search out more info.
WebCt is a powerful communication tool for me to planning and organizing my teaching, especially for the extramural paper. With the WebCT facility, I can keep the extramural paper teaching synchronized with the internal teaching progress, because I can ad
having never heard of them or used them, it would be useful to find out how they could help remove some of the pain of marking, provide better student feedback more efficiently, and provide security and robustness of results
I wanted to trial it, but just didn't have time on a fixed term contract. The situation would be even less possible for markers on casual contracts. If we are to continue with the present system of 'Third World' marking economics we won't be able to tra
I don't intend to use WebCT - I am happy with Prolearn, and am presently learning to use the function which allows students to submit and be marked online through Prolearn
When I used WebCTConnect to download the assignments, it did not unzip the assignment for a couple of the assignments it downloaded.
The MarkTool concept is excellent, but some of the functionality is a little clumsy.
An excellent development which I'd like to trial.
Make it available to Mac users.
Scripts to automate uploading of marking sheets and grades once the assesmsent is complete. Statistics tools showing the min, mean max and distribution of results per question and overall.
Where mulitple zip files are submitted creating separate folders to open them into so overwrting doesn't occur would be helpful. Easy way to pdf files in a students sub folder hierarchy given the suffix of the files to process would be useful. Then ma
Interactivity with the RPS - uploading results straight into there

Function to transfer info to WebCTconnect installed on home PC would be good (seems just downloaded assignmnets 'ticks' info needs to be transferrable) Make as flexible as possible as everyone has different requirements - often there are restrictions i
I think the major problem of the marking is not technical side, it is on our administration policy. We need a clear definition of rule to implement the online assessment work.
1) Listing key terms through automatic scan of an essay text; 2) Automatic generation of a table of contents + word counts of an essay so as to facilitate the assessment of the essay structure and length
MarkTool: (1) Word count of all or portions of assignment; (2) Ability to search, e.g. is reference in reference list?; (3) Ability to reconcile references with reference list; (4) Frequently used coments for Summary Comment; (5) Better management tools f

Table 12: Comments relating to e-learning support in general (as provided by participants; the web process used truncated long comments)

A very small number of my students still submit handwritten assignments so the new format could be challenging for th at group - perhaps a summer school study skills course needs to be offered (free?) for this group?
Would be useful as they are very time-consuming to mark in a moderately large class size
I am a marker, not a course controller. I don't have access to webct for the course.
Not having used them I am speculating as to what might be useful. However, the demographic of my papers is such that there is not a huge uptake of WebCT opportunities and if offered the choice of ways of submitting (which would be necessary because of tha
that it is woefully inadequate
I would like to be able to use it. It has great potential value.
None of my assignment are essay-type assignments
Its not easy using WebCT for assignments right now. The downloaded files doesnt even have an extension!
See little point in bringing in assignment in webct and not marking on-line. Fail to understand the message that NSATS still wants hard copy to go through their system. I have been missing out NSATS for three years with no problems.
I would happily use electronic methods if there was adequate support. The current On Line Learning and Teaching modules are not at all satisfactory for those who have

different ways of learning and who require one-on-one assistance.
would like to know more - would probably need a face to face session.
It is without doubt the way of the future so we should be putting more effort into developing systems and people to use it.
Unlikely to learn new software for the small numbers of students that we have
I generally prefer marking items by hand - I already spend too much time at the computer. The only assignments I mark on the computer are ones that involve automatic checks of programs and specifications.
My one attempt (a few years ago) into electronic assignment submission worked well for students using home computers but not from Massey computers (the Massey computer labs imposed restrictions that caused the software to malfunction, but without any warn
Don't know enough about any of the Massey systems. I am still learning all systems at Massey so anything which is easy and quick to learn which will save time in the future I am interested in.
ROLL ON THE DAY!!!! It should drastically speed up marking turnaround time and enhance feedback about performance for students. Concomitantly, I think we must be prepared for more negative reactions: in particular, an increase in WEBCT 'flaming' set o
When marking video assignments one would need to have the use of a laptop for practical and pragmayic reasons
I think e-learning support looks very promising. I also like the idea of by-passing NSATS, especially now that they're not even going to record grades as a back up.
The features listed in the previous page would seem quite useful.
Support through the university infrastructure is virtually non-existent, both for students and staff. Either that, or it is not very well communicated!
Keep up the good work.
Some students still lack the necessary technical skills or hardware to support e-learning. Unless both are made compulsory students in this category will have problems to access WebCT and participate in/benefit from e-learning.

7.   Conclusions and Recommendations

This survey on 'E-learning tools in support of marking and management of essay-type assignments' attracted 103 responses. This means a response rate of about 10% and a coverage of about 5% of all staff marking for Massey University. The survey dealt

with 'essay-type' assignments. These are so called 'supply items', meaning that the students needs to construct their own answers to the assignment questions and the marking needs to be done by a human marker. The survey respondents came from a wide range of subject areas.

According to the survey results about 20% of assignments are group assignments. The largest number of submissions per assignment reported was 1500; the average number was around 80. Most assignments contain a mixture of text and other elements. For more than half of the assignments students had to submit in more than one format. Submission as hardcopy is the dominant form with 90%, followed by email with 30% and WebCT with 15%.

Half of all assignments are marked by marking teams. For all assignments some form of feedback is given, by writing directly on the assignment and/or via a marking sheet. While in most cases the person responsible for an assignment marks at least some assignments themselves, this seems not to be the case for 10 – 20% of assignments. This could indicate an issue with the quality control of markers and should be investigated more closely.

The respondents showed the strongest interest in the features of the e-learning tools that directly relate to marking in a formative way. These features concern the direct commenting on assignment pages, the use of summary sheets, the use of marking schemes and the collection of frequently-used-comments. This welcome result gives a good indication that the participants are aware of the issues important for high-quality formative marking.

The survey results regarding the use of WebCT to assist the assignments marking and management process were disappointing. Only 40% of respondents know the WebCT assignment tool and only 10% use the tool. With hardcopy submissions dominating there is little opportunity for taking advantage of the strengths of electronic environments for recording submissions, managing marks and returning results. Where email is used for submission the use of a non-specialist tool that, for example, is not linked to class lists, requires time consuming and error prone manual processes. The management of the assignment process is an area where the use of tools would bring immediate advantages. Even just the use of the WebCT assignment tool, which has been available at Massey for years, would increase efficiency immensely.

The survey has shown very little evidence of the use of e-learning tools for the actual core task of marking, which is providing feedback according to clearly defined guidelines. Besides the few reports on uses of MarkTool and WebCTConnect there were about five descriptions of the use of other tools for supporting some aspects of the actual marking. While the marking itself cannot be carried out by computers electronic tools can provide strong assistance in guiding the marker, in increasing efficiency and in coordinating marking teams. Ultimately, this support can amount to an increase in the quality of marking, in turn leading to better learning opportunities for students. Tools like MarkTool and WebCTConnect already offer most of the functionality required to support marking. Yet, without the base step of electronic assignment submission, for example via WebCT, the tools cannot be used.

What needs to be achieved should be the full cycle – electronic assignment submission, marking of electronic assignment copies, return of marking results (feedback and marks) in electronic form. While there always will be exceptions where this process is not possible or desirable, for the majority of cases it would increase

efficiency and potentially quality. According to this survey the current ratio of paper vs. electronic is 9:1 – this ratio should be turned the other way round.

The responses to the questions and the individual comments provided demonstrate that the staff involved in the marking of assignments at Massey clearly recognise the potential for the use of e-learning tools in this area. Staff show willingness to use the tools. What the university needs to address are clear policies and guidelines, especially in the area of extramural studies. The information on availability of applications needs to be improved. Adequate training, possibly on individual basis, must be provided to staff.

Appendix A - INFORMATION SHEET

Title of Questionnaire: E-learning tools in support of marking and management of essay-type assignments

This research is conducted by Dr Eva Heinrich and Mr Jun Zhang from the Institute of Information Sciences and Technology, Massey University.

We are asking you to fill out a questionnaire on the use of e-learning tools in support of marking and management of essay-type assignments. We are interested in finding out what tools are used at Massey University, how well-known and -used two specific tools, MarkTool and WebCTConnect, are and how these tools can be improved.

Our focus lies on 'essay-type' assignments, which we characterise as follows. The assignment task requires the students to compose their own answers. This can mean to write an essay or a report, to develop a solution using mathematical formulae or to develop a model, expressed via text and diagrams. The resulting assignments will be of such complexity that a human marker is required for assessing the quality of the submission. Educational theory calls such assessment 'supply items'.

In the context of this questionnaire we are not interested in what is called 'restricted response items' that allow students to choose from a pre-defined range of answers.

This questionnaire is targeted at staff (permanent or casual) of Massey University who are involved in any aspect of assessing assignments. Individuals of other institutions are also welcome to fill out the questionnaire.

The data collected via the questionnaire will be stored in anonymous form. We will analyse the data and will make a summary of the findings available via our research project website, (http://www-ist.massey.ac.nz/MarkTool/). The overall aim of collecting the data is to receive guidance from the user community towards the improvement of the applications.

It will take about 5-10 minutes to fill out the questionnaire.

You have the right to decline to answer any particular question. Please note that completion of the questionnaire implies consent.

You are welcome to contact Dr Eva Heinrich about any aspect of the project and the questionnaire.

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This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researchers, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Ethics & Equity), telephone 06 350 5249, email humanethicspn@massey.ac.nz.

Appendix B – Questions

Comment: The questionnaire was administered in web-based format. It was divided in multiple pages with navigation links. The activation of the second part of some question was conditional on the answer to the first part. The wording of questions 16 and 17 was dependent on answers to questions 3 and 4. Depending on the question answers were given by selecting yes/no boxes, ticking one/several options or entering a textual response. Below the questions (and response options) are reproduced in textual format. The web-based questionnaire is currently still available at http://moodleist.massey.ac.nz/forum/survey/index.php but will be removed at some stage.

General questions

1a.   Do you mark assignments for Massey University?

2a.   Are you aware of the WebCT assignment tool?

2b.   Have you used the WebCT assignment tool?

3a.   Were you aware of the application MarkTool before reading about this questionnaire?

3b.   Have you used the application MarkTool?

4a.   Were you aware of the application WebCTConnect before reading about this questionnaire?

4b.   Have you used the application WebCTConnect?

Assignment specific sections

5.   Did you have overall responsibility for the assignment (setting the task, defining the marking criteria, justifying the results, ...)?

6.   Have you marked some of the assignments yourself?

7.   Have others been involved in the marking of the assignments?

8.   What was the subject area of the assignment?

9.   Which features did the assignment contain? (Please choose as many options as apply.)

Options: Text, Images, Graphs/diagrams, Formulae, Audio, Video, Other

10.   How many students approximately submitted the assignment?

11.   Were the students allowed to submit group assignments?

12.   How did students submit their assignments? (Please choose as many options as apply.)

Options: Hardcopy, Floppy disk/CD/DVD, WebCT assignment tool, Email, Other

13.   How were the students informed about their results/marks? (Please choose as many options as apply.)

Options: Via a hardcopy display (like printed list on notice board), Via hardcopies of their assignments returned to them, Via hardcopies of

marking sheets returned to them, Via the WebCT assignment or "my grades" tools, Other

14a. Did the students receive feedback on their assignments?

14b. How was the feedback given? (Please choose as many options as apply.)

Options: By writing on the hardcopies of the assignments, By writing on a hardcopy of a marking sheet, By writing in an electronic copy of a marking sheet, By adding comments to an electronic copy of the assignment, Other

15a. Have electronic copies of their marked assignments been returned to the students?

15b. How have these electronic copies been returned? (Please choose as many options as apply.)

Options: Via email, Via the WebCT assignment tool, Via the WebCT internal mail tool, Other

16. What functionalities of MarkTool have you used? (Please choose as many options as apply.)

16. What functionalities of MarkTool do you think would be helpful in marking and managing essay-type assignments? (Please choose as many options as apply.)

Options: Definition of a marking scheme, Writing of feedback directly on the assignment pages, Writing of an overall comment on the summary page, Collection and use of frequently-used-comments, Saving of marked assignments as PDF documents, Export of marks into an Excel or CSV file, Export of detailed feedback into an Excel or CSV file

17. What functionalities of WebCTConnect have you used? (Please choose as many options as apply.)

17. What functionalities of WebCTConnect do you think would be helpful in marking and managing essay-type assignments? (Please choose as many options as apply.)

Options: Download of assignments from WebCT, Automatic zipping/unzipping of files, Detection of group membership, Definition of a marking scheme, Filling out the feedback sheet for individual students, Writing comments to yourself during the marking, Upload of marks and comments to WebCT, Upload of marked assignments to WebCT, Export of submission data into an Excel or CSV file, Export of marking results into an Excel or CSV file, Allocation of multiple markers, Communication with markers (sending/receiving marking schema or marking data), Import of marking data from assignments marked with MarkTool

18a. Have you used any other applications (besides WebCT, MarkTool, WebCTConnect) to support your marking?

18b. Please describe briefly which applications you used for which functionalities:

Closing questions

19.　Do you have any comments on MarkTool or WebCTConnect?

20.　Are there any features you would like to see developed for MarkTool or WebCTConnect?

21.　Do you have any general comments regarding e-learning support for essay-type assignments?

Follow-up

22.　Would you like to be informed about new developments around MarkTool or WebCTConnect? (Email address will be stored separately from your answers.)

23.　Would you be prepared to answer follow-up questions to this questionnaire? (Email address will be stored separately from your answers.)