Senior Teaching Enhancement Fellowship
Interim Project Report on e-Submission & Marking.

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INTRODUCTION

This report intends to summarise the initial findings of the first phase of Senior Teaching Enhancement Fellowship project, related to electronic assignment submission and marking. This particular element of the project aims to explore the benefits and drawbacks of a range of technologies to support the process of electronic assignment submission and feedback.

The first phase of the project has been conducted within the Business School at York St John University during the academic year 2010/11. Further information about the project aims and objectives can be found in the project proposal, accepted by Learning and Teaching Development.

Phase one of the project involved 9 members of academic staff trialling a range of hardware and software in order to investigate two major questions:

1. Which were the most effective tools for allowing tutors to mark electronically?
2. Which tools and methods are the most sustainable for the institution to pursue in the long-term?

EXECUTIVE SUMMARY & RECOMMENDATIONS

1. This report is a write up of findings based on a Senior Teaching and Enhancement Fellowship (STEF) project, based on exploring and embedding electronic assignment submission and marking in the Business School. Its purpose is to disseminate the findings from the first phase of the project and to make any necessary recommendations for phase 2.

2. Phase 1 of the project was conducted between November 2010 and August 2011 and involved 11 members of staff trialling new hardware, software and methods for engaging with e-submission and marking. These included: iPads, dual monitors, digital pen, lightweight laptops, Kindle, TurnitinUK & Grademark. Participants were selected based on their answers to a questionnaire. They were then interviewed prior to their trial period, to ensure they had been paired with the most appropriate equipment and they were interviewed after their assessment periods, to feedback their experiences.

3. The research highlighted a number of trends:

   Participants accepted that e-submission and marking was inevitable. The pace of change with regards the use of technology in all areas of life, but specifically its impact on educational practices and behaviour was acknowledged. Participants were agreed that pursuing methods of facilitating e-submission and marking was a sensible way forward.

   Participants expressed concern over the extended time involved. All participants fed back their concerns related to the extra time spent as part of a new process. One of the main points raised was that related to administrative work, which an academic would not have had to deal with in the traditional ways of working. This refers to administrative tasks such as downloading electronic assignments from the VLE, managing the files, chasing up students who didn’t submit and loading the response files back into the VLE. This was seen as an unwelcome shift in workload from administrative to academic staff.

   Portability was highlighted as a key benefit. Participants who were trialling portable devices such as iPads and lightweight laptops, reported that their major benefits were around the reduction of paperwork, which previously needed to be carried around in large boxes, and that they allowed the participants to work much more flexibly. One example of this was the use of the iPad for annotating...
assessments whilst on the train and in an airport lounge, using what would otherwise have been ‘dead time’.

*The use of dual monitors was seen as beneficial for all staff.* Participants who trialled dual monitors were unanimously agreed about their benefits. This was in relation to two specific areas:

- *Eye strain* – having more space and larger screens makes things easier to read
- *Productivity* – being able to see information in different windows without having to switch views to see them, increases productivity and allows users to “think differently”.

**RECOMMENDATIONS**

- Dual monitors to be implemented across the Business School.
- The use of tablet devices to be pursued with a view to resolving issues related to file management and transfer.
- The use of lightweight laptops to be pursued.
- Not to pursue the use of the Amazon Kindle for facilitating e-submission and marking.
- Not to pursue the use of TurnitinUK’s Grademark for online annotation, especially with large cohorts of students. Instead, investigate an alternative called Red Pen Tool, which integrates with Moodle.
- Do not pursue the use of the digital pen to support electronic annotation. The technology is not mature enough and the effective use of the tool is convoluted.

**CONTEXT**

The research activity took place within the Business School at York St John University. The University has committed to the notion of electronic assignment submission and marking, see Appendix A - Commitment. Since 2007, the University has been exploring issues surrounding this cultural change through pilots and focussed projects. Pilot projects undertaken in 2008/9 have already highlighted issues around ‘resistance’ of some staff members to accept this change. See Appendix B - Electronic Assignment Submission Report 2008/9, Summary. Primary concerns were around the use of appropriate equipment which appears to be in relation to two specific realms. On-screen marking and the physical demands of this, such as eye and back strain, is one major concern. The second relates to flexibility of the approach. Qualitative data gained from unstructured interviews drew out the theme of staff wishing to retain a degree of parity over traditional marking practice and electronic marking practice. In other words, those people who like to take printed copies of students’ work home with them to mark in front of the fire also want to be able to mark work electronically in the same way.

Currently, the most widely used method for electronic assignment submission and marking within the university is the use of Microsoft Word’s comments feature. This is the primary method supported by the university, as detailed in the Principles of Electronic Assignment Submission document, which has been influenced and informed by this project.

**ADVOCACY**

In order to ensure that as many people as possible were aware of and therefore had the opportunity to participate in the project, a range of techniques were employed.

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1 Please contact Learning and Teaching Development for a copy of this document.
POSTERS AND FLYERS

Posters and flyers were produced to encourage people to consider which pieces of equipment might be beneficial for them to work with, based on their own personal preferences. They were made available in all commonly used public areas of the Business School, such as staff rooms. These can be seen in Appendix C – Flyers.

HARDWARE DROP IN SESSION

A facilitated drop in session was held, advertised via email and via several strategically placed posters, inviting colleagues to come and experience the potential of the hardware being offered and to discuss the potential benefits.

QEC MEETINGS

The STEF was tasked with providing initial information and subsequent updates at each Business School QEC.

DATA COLLECTION

QUESTIONNAIRE (NOVEMBER 2010)

In November 2010, a questionnaire was sent out to all members of academic staff within the Business School (41 full-time and part-time) with the aims of:

- gathering information related to attitudes around e-submission and marking in the Business School
- identifying potential advocates and disaffected members of staff
- identifying participants for the project

The number of responses was 24, representing a 57% response rate.

PRE-PROJECT INTERVIEWS (FEB 2011)

People who had been identified from the survey as participants for the project were invited to interview to discuss their current ways of working and to agree upon on equipment which might facilitate a new way of managing assignments electronically.

POST-PROJECT INTERVIEWS (JUNE-AUG 2011)

Participants in the project were invited to post-project interviews in order to offer the opportunity to feedback their experiences about the equipment they had used.

TECHNOLOGIES

The project has made use of established, but also emerging technologies. The list of equipment used is outlined below, along with the anticipated benefits of each.

HARDWARE

IPAD
The iPad was released in the UK in May 2010. It is an emerging technology and represents just one option in an increasingly saturated tablet device market. The iPad is currently the tablet device market share leader (ReadWrite Mobile, April 11).

The device was piloted by 3 users who had been identified by the initial survey as people who liked to work flexibly and in a non-formal space, but who also wanted to be able to emulate traditional ways of working with a pen and paper.

**Anticipated benefits/affordances**

- Portability of device and therefore of assignments.
- Ability to work on assignment offline.
- Touch screen emulates traditional marking more closely, especially when using the stylus.

**DUAL 19” MONITORS**

The use of dual monitors allows users to work with much more ‘screen real estate’, therefore facilitating more productive ways of working. For example, users find themselves having to flick between applications such as email and web browsers much less frequently. In addition, the extra space allows users to increase font sizes for reading and in order to reduce eye strain, without losing too much usable monitor space.

Although this is a comparatively low-tech option for those wishing to mark electronically, it does address a major issue highlighted by e-submission sceptics related to eye strain when using single, smaller monitors.

This setup was trialled by 2 users, who had identified themselves as liking to work in a fixed location, for sustained periods at a time.

**Anticipated benefits/affordances**

- More space on screen to working with
- Easier to look at and therefore reducing eye strain
- Encourages greater productivity

**AMAZON KINDLE**

The Kindle is another example of an emerging technology and is a type of device commonly referred to as an e-Book reader. The devices are designed to enable users to read large volumes of text, without the issues of screen glare or eye strain, which are common complaints with other electronic devices’ displays, for example desktop monitors and laptop screens.
This device was trialled by 1 user, whose questionnaire response suggested that they were interested in portability of several larger assignments. The device does not facilitate electronic annotation.

**Anticipated benefits/affordances**

- Portability
- Designed specifically for reading large volumes of text, therefore reducing eye strain
- Excellent battery life, so no need to have to charge regularly
- Relatively inexpensive

**DIGITAL PEN**

Another emerging technology is the digital pen. This option enables users to write in a traditional way on pieces of paper, with a specially designed ink pen. Then pen comes with a wireless receiver, attached to the corner or top of a piece of paper, which tracks the movements of the pen and then converts these into a digital asset. Therefore, it is possible to handwrite notes or complete annotations, which are then available as digital files for using electronically.

This device was trialled by 1 user, who was particularly interested in being able to continue with exactly the same as their current practice – a digitally based paper marking system.

**Anticipated benefits/affordances**

- Users can maintain their traditional methods of annotating (pen and paper)
- Annotations can be sent digitally for student feedback via the VLE

**SOFTWARE**

**TurnitinUKUK & Grademark**

TurnitinUK is traditionally known as a plagiarism detection service (PDS), whereby tutors and students can view ‘originality reports’, to identify where academic work may be at risk of plagiarism. Alongside the PDS element of the system, iParadigms, the developers, also offer an additional annotation tool called Grademark, which provides tools allowing assignments to be electronically annotated online. 1 personal trialled this software and supported a colleagues whilst doing so.

**FINDINGS & RECOMMENDATIONS**

**IPAD**

Generally, the iPad has proved to be a versatile and popular tool with those who have used it. The primary feedback is that it is light and portable and resolves the issue of tutors having to carry around large amounts of paperwork for marking. Added to this was the portability of student work via the device, opening up the doors to working in new and unexpected environments, leading to more mobile productivity. Once users have connected the iPad to the internet, email and calendar can be synchronised with Microsoft Exchange (the University’s system) and delivered directly to the iPad. Those people trialling the device reported being able to...
work in locations where they would not normally have been able to, such as airport lounges, trains and so on. They also reported being able to use idle time more effectively. For example, whilst travelling and waiting for a connection, one participant was able to use the iPad to mark some student work, which otherwise would have been considered as ‘dead time’. One user reported the ergonomic benefits of working in a way other than hunched over a desk at a keyboard. Users also reported additional benefits not related to marking, such as the ability to access information quickly during tutorials via the university’s wifi network. The iPad 2 also offers connectivity to projectors via HDMI, enabling tutors to share their screen with a class, or potentially share a presentation at a conference. The device itself has good connectivity and has not been problematic to connect to the University’s wireless IT infrastructure.

Use of the iPad is not entirely positive though and there are several major issues to be considered. The main impact of these issues relates largely to scalability and sustainability. The following themes have been drawn from the post experience interview data.

Initial setup & iTunes

Across the board, users found it difficult to complete the initial setup of the iPad. This is because the iPad requires users to have an iTunes™ account. iTunes™ can only be installed on a desktop or laptop computer and is not supported on the University’s IT network. Therefore, users had to use their own laptops or desktop machines in order to install iTunes and then setup their iPads. For non-technical users, this was a large barrier before they were even able to use the device. iTunes™ also required that users setup an Apple™ account and enter their own personal credit card details into iTunes™, in order to download Apps to the iPad - even those apps which are free to use. People expressed a combination of feelings towards this. One view was a degree of resentment to the tie in of their personal details to a specific business model, the other was a lack of understanding as to the reasons for having to use iTunes in order to setup the iPad, which caused frustration.

Because some of the apps required for the project to succeed had a cost associated with them (Quick Office HD Pro £13.99, iAnnotate £6.99), it was necessary to find a central way to enable apps to be purchased, without users having to buy their own and then claim the expense back via an administrator. This would be a laborious process. The method used from a central administration perspective was to have the Business School credit card details entered as a payment option into one of the project leader’s personal iTunes account. This then allowed one of the project leaders to send an app as a ‘Gift’ to one of the project participants. Therefore, payment was taken from the Business Card account and the participant was then able to download and use the app without incurring a personal charge. Although this worked for a small number of participants, the solution is not sustainable on an enterprise level, neither is the private purchase and re-claim via expenses model. One possible solution is to have this centrally controlled via IT purchasing, where Apps are bought using the IT credit card details, then internally re-charged. The feasibility of this would need to be discussed with the relevant personnel in IT.

Apps

Users reported the wide ranging benefits of the iPad Apps, which allow the device’s functionality to be limitlessly extended. All users reported that the App used to annotate during these trials, called iAnnotate, was extremely feature rich. They reported it to be user friendly and able to cater for all of their annotation requirements. One user reported that they found it quicker to read essays in iAnnotate than on a computer screen as they were able to scroll back and forth more quickly. A whole page of A4 was also visible at one time. However, users did also report an increased amount of time taken, due to learning how to use this new tool effectively, particularly around the implications for file management (see below). As a result of the vast number of apps available for download, many of which are free, one user expressed concern over the iPad being seen as a ‘leisure device’, suggesting that its credibility as a tool for work was compromised due to the wide range of entertainment apps available.
File Management

Another clear theme which emerged from the interview data was the issues around the iPad and file management. This is a complicated issue and one which understandably, many users had difficulty with. Unlike other devices, the iPad doesn’t accept any external input, such as a memory stick or memory card. Therefore it is not easy to get files from a desktop machine, loaded onto the iPad. The recommended method is to use iTunes and a synchronise process, using a wired USB connection. However, this would mean users being tied to their personal machines whenever they wanted to transfer files onto their iPads. The solution provided was to use a cloud based service called Dropbox. Dropbox allows files to be saved from a desktop computer to the internet. The iPad can then use the Dropbox app, to connect to the users’ Dropbox account and download the saved files for marking using iAnnotate. Furthermore, once documents are annotated, they are deemed by our Registry department to be sensitive documents and therefore we are required not to load the annotated files back to the Dropbox cloud service, which would then enable download to a desktop machine, ready for loading back as feedback to students via Moodle. The method for getting files from the iPad and back into the VLE as feedback, involved the iTunes synchronise process. This meant that when users were completely finished with their marking, they were only able to get the annotated files off their iPads, when they had access to their personal machine with iTunes installed.

The whole issue of file management was the single most troublesome element of using the iPads for e-marking. The complicated nature of the file management process was extremely difficult for users to grasp. Despite printed information and guidance, most users were unable to tackle this minefield without help. This made the support requirement extremely intense, especially around periods where feedback needed to be loaded into the VLE. At one stage, it was necessary for a home-based support visit for one user, in order to get files from the iPad to a memory stick, which could then be used to load files back to the VLE.

Figure 1 - iPad file management process

Cloud computing describes a new supplement, consumption, and delivery model for IT services based on Internet protocols, and it typically involves provisioning of dynamically scalable and often virtualized resources (Wikipedia, Aug 2011)
1. Download assignment submissions from Moodle to desktop/laptop computer. Optionally transfer those files to removable memory, such as a pen drive.
2. Upload assignments to the Dropbox service. NB. This requires that the user has setup a Dropbox account.
3. Using the Dropbox App on the iPad, download the files from Dropbox.
4. Once the files have been annotated and marked, sync the iPad with an associated computer using iTunes.

**File format**

A constraint of the software being used to allow annotation is that the files have to be in a specific format – PDF. This means that tutors must communicate effectively with students in order to get them to submit in PDF format, otherwise this leads to tutors having to convert the submitted files into PDF format themselves. This leads to an extra job for the tutors and therefore increases the time spent on the task. Two participants fell foul of this during the process and spent a large amount of time doing the conversion to PDF themselves. At the time of writing, the iAnnotate software is attempting to develop an automatic conversion process, whereby any files loaded into the application are converted, without the need for manual intervention beforehand.

**Support**

All iPad users have required support, which can be broken down into three phases.

1. **Pre marking.** Advice and consultation with regards how to setup with iTunes and navigate around the device.
2. **Pre and during marking.** Further training is required with regards to setting up the relevant apps, discussing file management and explaining the file management process.
3. **Post marking.** The final element of support comes when tutors wish to send their files back to students via Moodle. This involves syncing the device with iTunes and transferring the files to a shared network location, ready for upload.

The support interventions used are outlined in the following matrix

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<tr>
<td>Pre and during marking.</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Post marking.</td>
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The level and detail of training required for iPad users is currently unsustainable with the current resources and using the current methods. There are several possibilities for progression:

1. New iPad users are dealt with in groups, thus increasing the effectiveness of the time spent training.
2. Existing iPad users become mentors and cascade training, good practice and procedures to colleagues.
3. Comprehensive training and support guides are created and made available to users.
4. iPads are only issued to users who can demonstrate advanced IT skills

**Summary**

Although the iPad offers several opportunities to increase mobile productivity and emulates a more traditional method of marking students work, attention should be paid to how scalable it is for university wide deployment. In particular, faculties considering supporting electronic marking using the iPad should strongly
consider the issues highlighted around the use of iTunes on the university network, staff development and staff support requirements.

One potential area for exploration in terms of managing the delivery of apps on the devices is to provide each user with a £20 iTunes voucher. This may address the issue of having a centrally controlled iTunes account, which would be used to co-ordinate app purchases.

**DUAL MONITORS**

Dual monitors proved to be the lowest cost, lowest tech & lowest support intervention, but with the highest return in terms of user benefits.

One participant summed up the impact of dual monitors on their practice in the following statement, “One of the key things was that it allowed me to think more effectively”. The participant went on to explain that what they meant was that their trail of thought was not interrupted by having to switch between open applications, in order to check information. The dual monitor setup in this case allowed the participant to have the marking criteria for a piece of work on one monitor, and the student work on the other, therefore allowing for easy cross-referencing. This was echoed by another participant who also used a similar method for entering student grades and feedback onto a marking criteria form.

The issue of eye strain was also commented upon, one participant suggesting that there were benefits of being able to see more on the screen, without having to change eye wear to see.

**Cons**

The only downside to the use of dual monitors was that users were fixed to a location where the dual monitors were setup. For example, if the dual monitors are installed on a computer in an open plan office, there is no option to work elsewhere with the same setup, if there are too many distractions.

**Staff Development Requirements**

For those users of the dual monitors, there was no staff development requirement. After the hardware was installed by the IT team, users were simply able to familiarise themselves with the dual setup and carry on with their work.

**Scalability**

The use of dual monitors is entirely scalable across the faculty and across the university. It is relatively low cost to implement, but must be planned to fit in with the IT team’s commitments. The major consideration of doing this is the environmental and financial impact in terms of energy consumption, of having two monitors active.

**Recommendations**

Install dual monitors on all machines within the Business School. This will provide a faculty wide benefit to enable users to move towards e-submission and marking, using this method. There may also be peripheral benefits in terms of productivity for other common tasks, such as administrative email and resource development.
The Amazon Kindle was used by one user for the purpose of this project. The major benefits of using the Kindle were in the portability of student assignments combined with the ease of reading them on the device, due to its design. The user only used the Kindle for about 5% of their marking load and this was to take advantage of the benefits of its portability. The main theme to emerge from this user’s feedback was that ergonomically, it was much less tiring to read student work on the Kindle,

“I don’t know why but sitting at something vertically like when you’re sitting at your desk, is more tiring. I don’t know why, but looking down and reading it like a book [on the Kindle], it feels more like normal and feels more comfortable and more of a leisure activity. Just sitting, I don’t know what it is about the kindle but just flicking through it is quite pleasurable.”

Cons

One of the main issues with this device is that it can only be used for reading student files. That is to say, files cannot be annotated, edited or marked in any way on the device. Clearly, this limits the device to only being able to read content and tutors need to find complimentary ways of making corresponding notes for student feedback.

A second main issue experienced when using the Kindle was around file transfer. The user commented

“it’s a pain in the neck because I’ve got to download the file to my computer, then I’ve got to email it to myself, and then approximately about a third of the time for reasons I still haven’t worked out, it won’t take a docx. So it a student sends me a docx I’ve then got to transfer it, so it’s a two stage process. I download it to my machine, then I have to send it to myself through my email, and even then sometimes I get various problems with the document so I have to send it again.”

Staff Development Requirements

There was little intervention needed from a staff development perspective with this user. The device appears to be intuitive enough for users to be able to use it effectively relatively quickly. This is largely down to its limited use as an e-Book reader.

Scalability

The use of the Kindle is scalable, because it doesn’t require any integration with internal systems other than wifi for connectivity. The major consideration is around how the device would fit into the current workflow of a faculty or programme and whether there are realisable benefits to its use.

Recommendations

Do not pursue the use of the Amazon Kindle for electronic marking. This is mainly due to its restricted functionality and the issues around file compatibility and transfer.

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**DIGITAL PEN**

Digital pen technology is in the very early days of development. It had looked like it might be worth pursuing the potential benefits the technology had to offer. One participant trialled this hardware and unfortunately, the hardware didn’t work in the way the user expected it to. The user envisaged that the use of the pen would fit into their current marking practice, whereby they could mark work by annotating it with the pen, then the pen would capture the annotations digitally. The feedback was that the text recognition software was not accurate enough to decode the annotations and convert them to typed text, for use with student feedback.
This resulted in the user having to spend an equal amount of time correcting the converted text, in order for it to be usable.

Cons

Technology is not mature enough to deal with the multiple layers of complication and requirement where electronic submission and marking are concerned.

Staff Development Requirements

There was some time spent up front figuring out how the pen worked and linking the various pieces of software together. The participant was a competent user, therefore little intervention was required after the initial handover.

Recommendations

Do not pursue the use of the digital pen to support electronic annotation. The technology is not mature enough and the effective use of the tool is convoluted.

TURNITINUKUK’S GRADEMARK

Grademark was trialled by 2 users. TurnitinUK has been used at the university since 2007/8 as a Plagiarism Detection Service or PDS. When last the licence was renewed, we were able to take advantage of an offer which allowed us to have a campus licence for the TurnitinUK Grademark service. This service facilitates e-submission and online, on screen annotation. Feedback from participants suggested that there was great anticipation about the potential benefits of the service, with features such as,

- a comments bank, for storing commonly used feedback phrases
- a marking ‘rubric’, to assess student work against specific criteria
- options to add comments to the students’ work, regardless of the format
- several formats supported, e.g. MS Word, PDF, Plain Text etc
- A peer review feature, allowing students to critique each other’s work
- An originality report is produced to suggest where text in the student’s work has been matched elsewhere on the internet.

In reality, the potential benefits were not entirely realised, with the main benefit being reported as the originality report, which is generated as a result of student submission.

Cons

The feedback received on the use of TurnitinUK was not positive on the whole. This was primarily related to reliability and speed. When dealing with large cohorts, in this case 250+ students, a quick method is required. Adding comments and using comments from the comments back is also a slow procedure which works unreliable, one piece of feedback was that sometimes when adding comments, they were added twice.

One other major issue was that the system was unreliable when used across a range of broadband connections. For example, some feedback related to the system not behaving reliably when used from home.

The system doesn’t allow freehand annotation, such as a tick, circle or highlight. This means that wherever grammar or spelling needs to be corrected, a convoluted process of adding a comment needs to be undertaken.
Staff Development Requirements

There is an initial requirement for users to be guided through the main features of the tools available within the TurnitinUK suite (Originality reports, electronic annotation and peer marking). The training is essential in order for colleagues to understand the benefits and drawbacks of TurnitinUK & Grademark and to avoid confusion about when to use TurnitinUK as opposed to the native Moodle assignment activity.

Scalability

It is scalable and has already been deployed via Moodle. It is available for all tutors within YSJU to use.

Recommendations

It is recommended that the Business School does not pursue Grademark to support e-feedback, in particular, when dealing with large cohorts of students.

It is recommended that the use of TurnitinUK is widely adopted within the faculty in order for students to formatively check their work for evidence of matched text, to help them improve their scholarship.

It is recommended that the use of TurnitinUK continues with regards using it as one method within a larger process, of detecting or confirming suspected cases of plagiarism.

LIGHTWEIGHT LAPTOPS

Two models of lightweight laptop were trialled for e-marking.

Sony Viao X series.

This superlight laptop with 11” screen is highly portable, weighing less than an iPad and having all the expected features of a Windows-based operating system. This machine was used for a combination of commenting tools in Word, TurnitinUK’s Grademark, and the commenting tools in Adobe Acrobat.

Cons

- The correspondingly small keyboard was found to take some time to adjust to
- The machine became very hot during e-marking, resulting in the unit’s fan being on permanently and meaning that it couldn’t be used the user’s lap.

Apple Macbook Air 13”

This machine is heavier than the Sony, but only slightly heavier than an iPad. It has similar wake up time to an iPad, so is considerably quicker to use than a Windows laptop. In the same way as the iPad, this laptop could be used for short bursts of marking, for example, between tutorials. This laptop was found to be fast and powerful in comparison to the Sony, and it did not overheat. The user found that they would use this machine in their office rather than using their desktop machine as it was so fast and pleasurable to use.

Cons

- Macintosh computers are not fully supported on the university’s IT infrastructure
- There could be a considerable support overhead for users unfamiliar with a Mac operating system
- The relative expense of the technology in lightweight laptops at this time makes the Macbook Air look expensive compared to some cheaper solutions such as the iPad or Dell laptops.

Scalability
The use of Windows-based laptops is scalable and in keeping with the university’s IT infrastructure, because of its Microsoft focus.

The Macbook Air is a less scalable option and could be considered niche. Within the YSJ context, it is really only suitable for existing Mac users, or those keen to learn to use a Mac. While being fairly intuitive, like the iPad, many users may prefer a more familiar interface.

Experienced Mac users or users with advanced IT skills may be prepared to sacrifice their desktop for a machine such as this, which could offset its cost, but the Macbook’s reliance on an operating system incompatible with the University’s network would most likely mean that this would not be possible.

**Recommendations**

In general, lightweight laptops should continue to be considered, as they enable users to mark away from their desk, potentially with all the functionality of a desktop. Of course they are not suitable for those users seeking the ability to annotate by hand.

It is recommended that experienced Mac users, advanced users or those keen to learn to use a Mac are considered for a Macbook Air. Alternative Windows-based machines and emerging tablet devices will continue to be researched for the remainder of the project, as more powerful lightweight machines may become available. We should be cautious of notebooks for e-marking as they lack power and tend to overheat.

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**COMMON FINDINGS**

**Time issues**

A common theme to emerge from the data was that of time. In almost all cases, with the exception of dual monitors, participants reported that their time spent marking student work was significantly more using the new method adopted. In some cases, participants reported having to spend almost twice as long on the process. This is a major concern for academic staff, especially when considering the context of the University’s proposed workload model.

Most users did acknowledge that any new method is inevitably going to take longer. There are new process to identify and new skills to learn, however there was concern expressed that even after any issues are resolved and competence increases in the use of a particular tool, the whole e-submission process transfers extra work to academic staff, which wouldn’t have been part of their role in the traditional paper based method. The main things mentioned were the administrative tasks of setting up an assignment in Moodle, checking that students had submitted, chasing up students who haven’t submitted, downloading assignments, re-uploading assignments and entering grades. There was also concern expressed that no acknowledgement was given to participants trying new methods for the first time, with regards expectations on the turnaround of student feedback. There was a general feeling that electronic submission as a whole, regardless of the method used to mark student assessments, shifted work from admin staff to academics and on the whole took much longer.

**Implications of using 3rd party ‘cloud’ services**

This project has exposed some issues that require further consideration by the university. As outlined above, the use of mobile devices often requires the use of 3rd party ‘cloud’ services such as Dropbox. This resulted in some concerns from the IT department as we embarked on the project, about the security of student data held off-site. We were advised by the Registrar at the time, that student essays were considered as sensitive...
once they had been annotated or had a grade attached. This resulted in the rather long winded file management process for the iPad, as outlined above.

As established, working practices may currently include emailing student work over unsecured wifi networks or storing/transferring work on unencrypted USB sticks. It is important that we don’t disregard the use of cloud services out of hand, as they have much potential to enhance our working methods, including e-marking.

If the University feels that cloud services are not secure enough to store student work on, we would welcome the development of an alternative option, which could connect mobile devices with a YSJ secure area.

Currently, advice has been sought from IT on the use of Dropbox, but this has been only at an informal level.

Dropbox does not currently have EU-US Safe Harbor certification, although it is being sought. Its security (via Amazon S3) is outlined here.

**Recommendation**

We urge the University to provide clear guidance for staff on the management and storage of files, including the use of third party services as outlined in the balancing risk, while enabling effective and innovative working practices.

### WHAT NEXT?

**Principles of e-Submission Document**

The experiences and feedback of those involved with the e-submission project within the Business School has helped to inform the development of a university-wide document entitled ‘Principles of e-Submission’. This document was developed as an outcome from the now disbanded e-submission working group, originally chaired by Jill Armstrong, Dean for Learning Development and latterly chaired by Peter Grey, Deputy Dean Health and Life Sciences. The document is being tabled at the November 2011 QSEC meeting, to which Peter Gray is speaking, for comments and approval.

**Trialling Android devices which allow external inputs**

Tablet devices such as the iPad do seem to offer a range of benefits related to e-marking. The ASUS Eee Book, which has a dockable keyboard and accepts external inputs, will be investigated as a potential alternative to the iPad. The second phase of this project will report on the findings of users trialling this hardware.

**Continued use of iPads**

Despite the issues identified surrounding the use of the iPad, their popularity is increasing and many staff users are still enthusiastic about working with the devices to facilitate electronic assignment feedback. The iPads from users who have moved on to the Android devices will be offered to other participants. Those who have demonstrated a good level of competence with iPads, will be paired with new users, in order to cascade knowledge and information. The MFL team in particular, will be supported in their use of iPads.

**Red Pen Tool for Moodle**

A service called Red Pen Tool has launched an annotation activity which allows users to work on files directly from Moodle. Their services will be explored and a demonstration arranged for interested people.

**Dual Monitors in the Business School**
Investigations will be made into equipping all machines within The Business School with a dual monitor setup. This will be co-ordinated and scheduled with the IT team with the help of senior administrative staff within The Business School. This option represents a considerable investment from the remaining budget funds, but will still allow the project to pursue the other proposed developments.

**Lightweight laptops & emerging tablets**

Experienced Mac users, advanced users or those keen to learn to use a Mac will be considered for a Macbook Air. Alternative Windows-based laptop machines and emerging tablet devices will continue to be researched for the remainder of the project, as more powerful lightweight machines may become available.
APPENDIX A - COMMITMENT

Electronic Submission of Work: 2008-09 Proposals

Minutes from meeting of 17 July 2008

Background

A number of pilot projects were undertaken during 2007-08 to explore the opportunities and issues surrounding the electronic submission and marking of coursework. These pilots were reported on in various fora and a paper was presented to Academic Standards Committee, May 28, for next steps. It was agreed a meeting be convened involving the Faculties, Registry and Directorate for Learning Development to agree developments for 2008-09. The group re-iterated its belief that YSJ continued to need to move forward in developing its practices in e-submissions, particularly in the light of increasing student expectation of this opportunity. It was also thought that this could, in addition reduce administrative load and possibly paper storage requirements longer term.

Discussion

It is recognised that e-submission of work is not suitable for all types of assignments, but it was accepted that all text-based, and possibly some multi media assignments could be submitted on-line. Although anonymity may appear to be an issue, it was pointed out that markers could find out now whose work they were marking through checking the student number in SITS. It was agreed that a realistic target for all submission of text-based and other appropriate assignments should be done on-line by the end of 2010-2011, and that we would build towards that, reviewing what we had learned each year.

It was agreed that marking and providing feedback on-line is a related but separate issue to submission on line. The group saw the identification of appropriate methods of online marking and feedback as essential and acknowledged that there would be individual preferences for possible ways of doing this. There are issues of too much VDU time for large marking exercises and further consideration needs to be given to various solutions. It was agreed methods for moving away from desk based PCs need to be explored. The issue of how moderating would be undertaken also needs to be addressed. It was agreed Faculties would continue to pilot various marking and feedback methods and develop good practice for wider dissemination during the coming year.

Actions 2008-09

Registry

1. To create YSJ regulations associated with on-line submission for summative assessments building on good practice (regulations) developed in other HEIs.

Directorate for Learning Development

2. Procedural advice to students on up-loading their assessments to Blackboard be created for use by all Faculties (MD)
3. Procedural advice to staff on processes necessary for effective student online submission created for use by all Faculties (MD)
4. Checking to ensure all students on and off campus can use Blackboard system for up-loading assessments.
5. Development of an electronic cover sheet that can be customised by faculties will be produced.
6. Print services to confirm what might be possible for printing for marking purposes.
Faculties

7. All submission of text-based and other appropriate assignments should be done on-line by the end of 2010-2011.
8. Every member of faculty who uses text based assignments to have trialled the use of e-submission of work in at least one module by the end of 2009 academic year.
9. Faculties work with their e-learning champions to develop further pilot projects for effective on-line marking and feedback of student work.
10. E-learning advisers working in the faculties will provide support for tutors piloting submission of assessments.
11. Faculties and DLD will look for bid opportunities (e.g. from HEA Subject Centres, JISC etc.) to pilot work or undertake research in the area.

HR

12. Good practice in on-line submission, marking and feedback will be disseminated via staff development events/opportunities through the year.

All

13. The work undertaken will be reported on and reviewed in January and July 2009. The next year’s development work proposals and actions will be completed by end July 2009.

Group members:

Pauline Aldous, Jill Armstrong (Chair), Peter Gray, Terry Madeley, Richard Noake, Julie Raby, Nikki Swift

Jill Armstrong

Director for Learning Development

July 2008
Report Summary

Feedback from the electronic submission and marking pilots during semester 1 2008/9 suggests that most colleagues feel this mechanism for gathering assignments and providing feedback for students is, on the whole, a feasible option as we move towards university-wide adoption. 75% of respondents to the feedback survey said they would recommend e-submission and marking to colleagues.

This is not to say that there have not been issues highlighted by the pilots in e-Submission and marking. In brief, the following were the main issues raised.

- Counselling expressed concerns over confidentiality of the stored information, as all tutors have access to every student’s electronic assignment.
- Business & Communication questioned the security of the stored data and whether it came under UK data protection laws.
- Anonymous marking is not possible using the built in assignment submission tool within Blackboard
- Concerns were raised over electronic storage space for assignments

Individual colleagues were opposed to the process of on-screen marking and feedback for the following reasons:

- Health issues, including back strain and eye strain in particular.
- Marking assignments from home becomes more difficult, as electronic marking presumes people have the necessary equipment; hardware and internet connectivity speeds, to facilitate this.

The following suggestions were put forward by colleagues in order to make the process easier:

- Ensure administrators are familiar with the process and devolve some assignment management responsibility to them
- Increase monitor size for work computers where electronic marking is concerned
- Advise on easier methods of allocating marking to multiple module markers
- Allow for a plurality of practice to be defined by teaching staff, not by policy dictat.

Recommendations

- Pilot the use of TurnitinUKUK as the mechanism for receiving e-submissions and for providing e-feedback. TurnitinUKUK have recently released a new version capable of supporting anonymous marking. This tool is also portable, meaning that if we move away from Blackboard as the central VLE, we can still port the functionality of TurnitinUKUK to the replacement system.

- Work strategically and in partnership with faculties to identify and work through processes and procedures specific to their requirements.

Mark Dransfield, e-Learning Advisor

April 2009
iPads for e-submission & marking

iPads are not everyone’s cup of tea and they do take some getting used to. However, with the appropriate ‘apps’ installed, it is possible to use the touch screen annotation features to mark students’ assignments. Web browsing and email features are excellent.

Pros

- Immediate ‘wake-up’
- Stays cool and battery life is excellent
- Touchscreen, lightweight and portable
- Choose your preferred location for dealing with students’ work
- Access web based content from anywhere with a wireless hotspot
- A variety of apps are available to suit a range of tasks

Cons

- Despite being very light, portable and multifunctional, it’s not necessarily a replacement for a PC.
- Some people might not like the typing interface.
Dual monitors for e-submission & marking

One possible way of improving the marking process for tutors is to use ‘dual monitors’. This enables the tutor to use two screen to manage and mark assignments. The obvious benefit is that you can see more information at any one time.

This option might suit someone who doesn’t mind marking on screen and being tied to one place.

Examples of use

Have student assignment in one monitor window, leaving the other free for other information, for example a website, plagiarism report or another word file

Have two students’ pieces of work available, one in each window

Have one window with a student’s piece of work and another with a bank of comments you regularly use
Amazon Kindle for e-submission & marking

Amazon Kindles are ‘e-book readers’. Their main advantage, aside from the obvious portability, is the ease of reading for the user. It is relatively simple to load students’ work onto the Kindle in order to read ‘on the go’.

This kind of device may suit someone wanting to read assignments electronically, but feedback in a different way, such as using audio.

Pros

Easy to read screen, without ‘glare’, even in sunlight
Sharpness and clarity of the text and images
Long life battery power and unit doesn’t overheat if used for prolonged periods
Capacity to store hundreds of books and thousands of files

Cons

Lack of on-screen annotation
Some files don’t retain their original formatting
Small keyboard input
Laptops for e-submission & marking

Laptops are a more flexible option for e-submission and marking. They can be taken to and used in a variety of locations. Most have built-in wireless connectivity, meaning you can also connect to the internet from a range of wireless ‘hotspots’.

*These devices are suitable for people who like to be flexible in how, when and where they mark.*

**Pros**
- Mark assignments on the move
- Choose your preferred location for dealing with students’ work
- Access web based content from anywhere with an internet connection
- Fully featured versions of the most common software, like MS Word and Open Office

**Cons**
- Can get hot if you like to sit with it on your knee
- Can be too heavy for some people
Discussion paper for QSEC

E-marking and feedback and the use of external hosts.

The Business School e-marking and feedback project has led to an increasing number of staff using more varied methods of online marking and feedback. The nature of some of these methods of providing feedback has led us to consider the potential implications for the University’s QA processes.

Audio and/or video feedback may exploit external service providers, such as a screen capture service that allows a student to hear their tutor’s voice while seeing their tutor scroll through their essay on screen; they see precisely what their tutor is looking at while they are talking. The tutor can use the mouse to draw the student’s attention to specific part of the page as they speak. Upon creating the screen capture feedback, the tutor generates a unique URL to paste into Moodle. The student clicks on the link which takes them to the provider’s website where they receive their feedback.

The e-submission working group invites QSEC to consider the relative benefits and risks of using such technologies and to make a recommendation about their use.

An example of a service of this type, is ‘Jing’, a free product provided by Techsmith, a screen capture and recording specialist based in the US. As far as we are aware, this type of service isn’t being used extensively within the University, so we don’t have substantial data on its success, but the member of staff using it this year has reported very positively, saying that it was relatively quick and straightforward to provide feedback in this way and that students responded positively. One email she received from a student is as follows:

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hello,

I just wanted to write to say that I found your comments really helpful (sic) and I now understand how to achieve the higher grades.

also I really loved the way you gave the feedback, it is a really effective way of doing it and I really appreciated it.

thanks.
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An example URL looks like this: http://screencast.com/t/RQrJhMMTud0. It contains no personal information and is not predictable, and the only way to access the link is by being given it. In the case of the service provider being used in this case, ‘Jing’, the company providing the service, Techsmith, are signed up to the US-EU Safe Harbor privacy principles.

While this kind of service has its benefits, there may also be some risks.

We perceive the risks to be:

- The company may close the service, at which point any record of the feedback could be inaccessible.
- We are unsure of whether it would be possible for there to be any breach in the security, leading to students’ feedback becoming publically accessible.

Mitigating factors

- The risk of feedback being made public may be very small indeed, and the nature of the feedback is unlikely to be extremely sensitive.
- It may be much more likely that a student could be given the wrong mark or feedback by a tutor, as could happen in any form of feedback.
• Paper or other electronic copies of work can also be lost in extenuating circumstances.
• Tutors could be required to download an electronic copy of the moderated sample of work, which could be stored on the Moodle site for the module in an archive folder. Downloading the screencasts of the whole cohort’s work would be time consuming and have storage implications, and may discourage tutors from using this method.
• There may be paid solutions that offer more security, but the benefit of the externally hosted solution is that it avoids time consuming download/upload and does not take up space on our system.

Nikki Swift 11/03/11

e-submission working group