

# Adding Mobility to Distance Learning

## PLACES Case Study

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### Background

#### Aims and Objectives

The Department of Criminology at the University of Leicester has piloted the use of the iPad for delivering a distance learning Masters programme over the past year. The aim of the pilot is to allow distance students to have greater flexibility in the way in which they access their learning materials.

#### Context

The University of Leicester is one of the largest providers of postgraduate distance learning in the UK. The University currently has more than 8,000 students studying by distance learning. The University sees the expansion of its distance learning provision as an institutional priority and offering distance students a learning experience that suits their needs through innovation is central to this expansion.

The Department of Criminology at the University of Leicester has been established for 25 years. The Department has around 1,000 registered students, of which, about 750 are distance learners. Distance learning is considered a high priority within the Department and currently it offers four programmes by this mode of learning, most of which are at Masters level:

- MSc/BA/Foundation Security and Risk Management
- MSc Criminology and Criminal Justice
- MSc Police Leadership and Management
- MSc Security, Conflicts and International Development

The Department started offering distance learning in 1993. Print (via print materials and books posted to students) has been used as the primary delivery method for about 15 years. The Department began to transfer the delivery of course materials to the University's Blackboard Virtual Learning Environment (VLE) from 2005-06. Since then print delivery has been replaced by a mixed delivery mode – some students have materials posted to them only, some access materials from Blackboard only, and some have both.

In 2011 the Department began to develop a new course – the MSc in Security, Conflict and International Development (SCID). Through detailed research, the development team quickly realised that the target audience for this new course would require a high degree of flexibility in the way in which course materials could be accessed – carrying large amounts of printed material or having 24/7 access to the Internet would not always be possible for these prospective learners. The SCID course (<http://bit.ly/wloEKb>) was launched in March 2012. As a central component of the course, enrolled students received an iPad plus a custom-built app (<http://tinyurl.com/crimipadvid>, <http://bit.ly/zWGULY>). The app can be downloaded from iTunes and provides the distance students

with access to a wide range of essential study materials (including the core learning documents and resources associated with them), and support materials (including a course handbook, a referencing guide, study skills, and information about the Department and the University). Through a mixture of text-based, video and audio resources, the iPad and app enables students to effectively continue their studies while on the move and away from the Internet.

### **The Business Case**

The app is developed by a local company based near Leicester. To fund the development of the app the Department negotiated a deal with the company so that they receive regular payments based upon a percentage of the course fees received by the University. In other words, the more successful the recruitment of students the more income the company will receive.

The app is made available on iTunes. A password-protected system is built into the app to prevent anyone from accessing all the materials available in it. (The app can be downloaded for free but only a very small percentage of the materials can be accessed before a username and password must be entered).

The Department raised the level of course fees to cover the cost of providing the iPad and each student enrolled on the course must sign and return a disclaimer document to the Department. The disclaimer states explicitly that the student becomes the owner of the iPad once the device is received, and it is the student's responsibility to communicate directly with Apple should the device breakdown. The iPad is posted to the students, and the University pays for the postage and import tax (about £80 per iPad in most countries).

### **Key Drivers**

Understanding the market and needs of the students was essential to the success of the SCID course. The majority of the students who are interested in the programme work for organisations such as the United Nations, international aid agencies, international bodies or government agencies. A large part of their work involves visits to post-conflict countries such as Sierra Leone or Libya, helping to restore security in these countries. This particular group of students face a number of challenges when studying a course by distance:

- Access: it is unlikely that there will be a reliable and regular Internet connection in these post-conflict regions.
- Travel: students travel considerably as part of their work.
- Time: students are very busy and time poor.
- Resources: it is unlikely that there will be facilities such as a local library in these post-conflict regions where students can find resources for their studies.

The materials need to be portable and convenient for students to carry around due to these limitations. The ability to enable mobile learning and offline working are essential to enable these students to continue their study under these challenging situations. The Department therefore decided to go for mobile delivery using the iPad to address these problems.

### **JISC Resources/Technology Used**

#### **1. The JISC Mobile Learning infoKit**

The JISC Mobile Learning infoKit (<http://www.jiscinfonet.ac.uk/infokits/mobile-learning>) is an excellent resource to guide people through the different considerations for institutional strategic adoption of mobile learning solutions. The infoKit has been used as a basis for generating a series of blog posts for the Places project, in which sections of the infoKit are commented, findings and new queries were raised for Places. The Places blog can be found here <http://placesmobile.wordpress.com>.

## **2. The DUCKLING project**

The outputs from the DUCKLING project (<http://www.le.ac.uk/duckling>), including two case studies of the use of e-book readers in Occupational Psychology and Education Masters' programmes, and the Guidelines for integrating e-book readers into distance learning curricula, were found very useful and relevant to Places.

## **3. The JISClegal Mobile Learning Good Legal Practice**

The JISClegal information (<http://tinyurl.com/k9d2elh>) gives an overview of how to handle legal and risks of sharing learning materials on mobile devices. In addition to the online resource, the JISClegal session on mobile legal good practice, run at the JISC RSC East Midlands e-fair on the 21<sup>st</sup> June 2012 in Nottingham provided lots of practical guidance which were found extremely useful for Places.

## **4. The iBorrow Project**

The iBorrow Project (<http://www.jisc.ac.uk/media/documents/programmes/institutionalinnovation/iborrowfinalreport.pdf>) demonstrated an example of students using notebooks for accessing applications and resources in an open-plan learning centre.

## **5. Online Support Sessions with the Critical Friend**

The webinar sessions moderated by Sarah Chesney are very helpful. It is very useful to discuss with the other projects their successes and issues which have informed the Places project.

# **Outcomes**

## **Achievements**

### ***Institutional Cascading***

The iPad pilot has paved the way for other departments at the University who are interested in mobile delivery. One successful example is from the School of Education. The School started delivering a new distance MA in International Education in October 2012. Students enrolled on this course also received an iPad that enables them to access all core materials for learning in places where there is no Internet access. The course team converted all module materials into iBooks (one iBook for every module of the course) via iBooks Author – a free App that allows anyone to create multimedia textbooks for the iPads. The iBook has videos, audios (podcasts), hyperlinks, and text embedded in it. Each iBook contains the same content as the course on Blackboard. The iBooks are made available via a private iTunes U Course for students to download onto their iPad.

Similar to Criminology, the School of Education raised the course fees to cover the cost of the iPad. Each enrolled student also signed a contract with the School, transferring the ownership of the device to the student.

The Education team has received positive feedback from their students regarding their use of the iPad and iBooks. The School is now considering using the same model for their other distance learning programmes.

A number of other departments at the University have also become enthusiastic about mobile learning and are starting to use similar or different models to deliver their courses. Examples include:

- The School of Education is looking into piloting Kindle e-book readers for a distance learning programme.
- The Institute of Lifelong Learning is considering using tablet PCs in their distance courses. This has led to the launch of the working group which aims to provide better support to departments considering mobile learning.
- The School of Management is providing all distance learning materials in ePub and PDF formats to enable students to read on any mobile devices.
- The School of Medicine decided to launch the one- iPad-per-campus-student model from autumn 2013.

### ***Institutional Mobile Learning Agenda***

The Criminology pilot has put mobile learning firmly on the University's agenda. The University has started to consider how to provide centralised support for mobile learning across the institution which will lead to institutional change in a number of ways. The University's IT Services will need to respond to questions such as, how should we support end user devices, and should the University have in-house app developers? As a first step, the University's IT Services now offer support for staff use of mobile devices, and has invested in the development of Blackboard Mobile Learn App for students. The library will also play a significant role in sustaining the growth of mobile learning across the University. One key area is to liaise with publishers on copyright issues on behalf of departments. The University's administration will also need to work on aspects associated with the purchasing of the devices on behalf of departments and dispatching them to students.

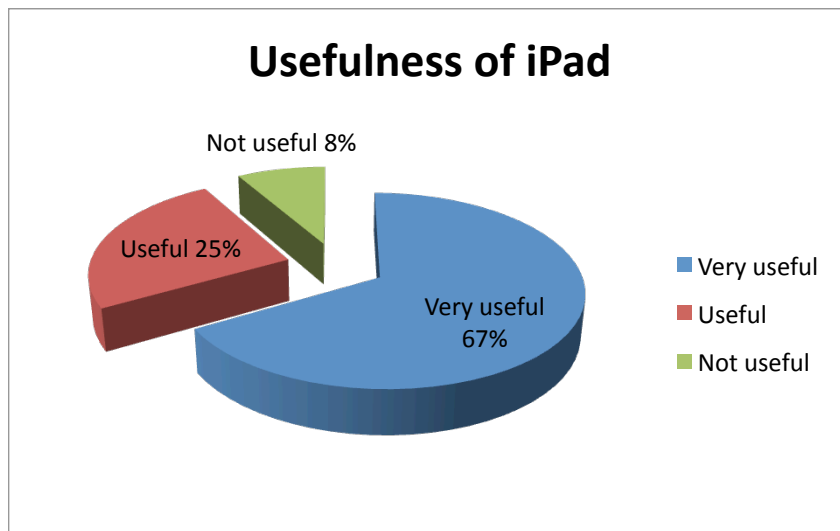
The pilot has also cascaded good practice in curriculum design and delivery for mobile learners across the University. This has had a knock-on effect on the University's traditional course design, delivery and implementation. Academics have begun to shift away from just thinking about designing courses delivered via Blackboard to how their course can be designed for mobile devices as well. For example, they have started to think about questions such as, what will their course look like on Blackboard Mobile Learn, and how should they structure and scaffold student learning using the mixed devices available to the students? In addition, academics are increasingly thinking about how they can make greater use of multimedia (videos and audios) to bring course content to life. They have also started to capitalise on other technologies and resources such as open educational resources (OER) to enhance their study materials. The University will also need to consider how to provide support in course design and delivery for mobile learning across the institution.

### **Benefits**

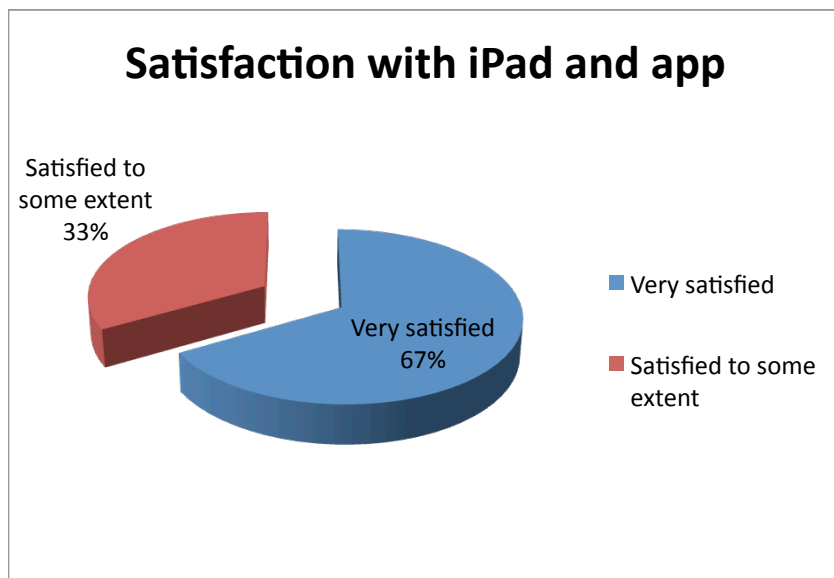
Feedback regarding their use of the iPad and app was gathered from the students enrolled on the SCID course via an online survey, made available via Blackboard. A total of 12 students (out of 30 students enrolled on the course) completed the survey (response rate 40%). The results indicate that the iPad improved the experience of the distance learners involved in the pilot in a number of ways. The key findings are presented in the following sections.

### ***Usefulness and Satisfaction***

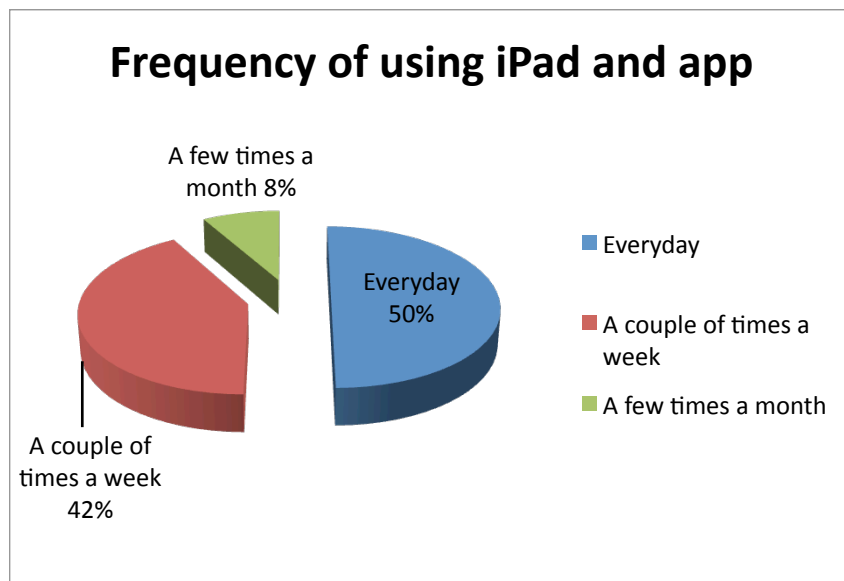
92% of the respondents state that the iPad and app is very useful or useful.



100% of the respondents indicate that they are satisfied or satisfied to some extent with the iPad and app.



Students use the iPad and app a lot. 50% of them use them every day.



#### ***Study on the Move***

Students valued highly the portability and flexibility that the iPad offers. All the respondents indicated in the survey that they used their iPad in different locations, including at home, at the workplace, in public places (such as in the airports), and on the move (e.g. on a train, bus or plane). For some students, as the nature of their job requires them to be in the field quite often, the iPad became the only solution for them to continue their study while on the move:

“For me, the course app is suitable based on the nature of my job which demands me to always be on the move. Print could be very bulky for me to move.” (Cri\_6)

“I love the fact it is mobile, as I am constantly on the move. Travelling with books would be unrealistic.” (Cri\_7)

#### ***Study Offline***

The iPad offers students the advantage of accessing, storing, managing, and editing (such as making notes, highlighting) the majority of the materials they need for their study on one single device. The ability to access course materials without an Internet connection is also considered essential for some students, as they live or work in places where there is no access to the Internet or the network is too slow and expensive. In these difficult places, the iPad provides the opportunity for them to continue their study offline.

“Often my internet is of a poor standard so the app makes it easier to study without having to wait for the page to load.” (Cri\_3)

“The Course App allows you to access the information on the move without the paper clutter. Complementary apps also assist with note taking and highlighting...The Blackboard site is [my] third [choice] because of the field of my job, accessing the internet through a laptop or desktop is not easy.” (Cri\_9)

“E-books are very handy. They are easy to store/access, and the programs now allow you to highlight and make notes...” (Cri\_11)

#### ***Time Management***

The portability of the iPad and the opportunity to have all the course materials on one stand-alone device made it very convenient for carrying around and reading a few pages whenever students had a gap. Students took their iPad with them wherever they went. The iPad enabled them to do more reading and make better use of their available time.

“It has enabled me to read the material without carrying a bundle of books and is very good for studying at work during the free time.” (Cri\_3)

“Having access to the information wherever I go has allowed for better time management particularly as a distance learning student and under full time employment.” (Cri\_9)

“I have thus far enjoyed the experience using the iPad and Course App, it is a dynamic learning tool, which has done an excellent job in filling the gap for the working student who is unable to be on campus, by making the material available everywhere you go.” (Cri\_9)

### ***Motivation and Engagement***

The content in the app is organised in a way that enables the students to follow it easily. Each module is divided into six units. Each unit covers a particular topic, and is made of three resources. The first resource is usually a podcast introducing the unit. Other resources include the core documents (main body of content) and a series of resources associated with the core documents. When students go through the core documents, they are prompted to look at other resources associated with the core documents. In the core documents, different symbols are used to differentiate text, audio or video material. There are also symbols indicating whether going through the resource is required (R) or optional but useful (U).

Structuring materials into small interactive sections has greatly improved student engagement with the content. Students are also more motivated to learn from multimedia content as they found their learning experience more interactive.

“Firstly I am more motivated, as it is structured and organised. I am getting through more than I would if I was solely given a recommended reading list.” (Cri\_1)

“The Course App is easily accessed, it is pre-structured and organised. I find it a logical progression and a great guide to complete a unit by using the course app.” (Cri\_1)

“It is more interactive than other conventional means of studying. You can use audio visual options, plus get to online links which can help maintaining focus while studying. Plus this is like mobile education as you don’t need to go a physical space, e.g. study room or library to study.” (Cri\_2)

### ***Skills Development***

Some students also mentioned in the survey that the course offered them the opportunity to develop digital skills through the use of a variety of platforms, tools and technologies.

“I have found the course material, the iPad and [the] Blackboard all very useful. It is forcing me to maintain pace with technology, a point I needed to with having two boys both studying at the 6th form and university respectively. I am really enjoying using and blending all the teaching methods available.” (Cri\_4)

All the respondents in the survey also indicated that they used a range of apps from the iPad to help their study, including PDF Readers, Kindle app, Twitter, Pages, Evernote, iTunes U, Skype, iBrainstorm, Dropbox, and Blackboard Mobile Learn. This experience has also contributed to skills development.

## **Challenges**

### ***Copyright***

Copyright presents a big challenge when making course materials available in an app. The Department signed a contract with the app development company (the contract was prepared with the help of the University's solicitor) to ensure data protection and prevent copyright infringement. Different types of resources were then categorised based on the level of copyright the Department had. Different symbols were attached to each piece of resource within the app to indicate the level of copyright. For example, the '24/7' symbol represents that the resource has been fully embedded in the app because the Department has full copyright permission to do this and the size of the resource could fit into the app. The 'Wifi' symbol indicates that students will need connectivity to the Internet to be able to access the resource either because the Department has not got full copyright permission to embed it in the app or the resource was too large to fit into the app. The 'green book' symbol indicates that the resource is either an e-book supplied separately or a hard copy book sent directly to the student and therefore not embedded in the app.

### ***Provision of E-books***

The Department wanted to provide the students' textbooks as e-books. How to provide e-books to the students became a real challenge, as the publishers producing the textbooks relevant to the course did not allow the Department to preload the e-books onto the iPad in advance. In addition, some publishers refused to deal directly with the students, by allowing them to download the e-books from their websites. In order to get around this issue, the Department sent each student an Amazon voucher for the value of the e-books so that students could then buy these e-books from the Amazon website themselves. In addition, a further two e-books were provided via a bespoke app developed by a publisher that required the pre-purchase of vouchers by the Department, which were then sent to the students. In order to support students to use e-books, the Department provided a support document to advise students on how to download e-books from the different sources.

### ***Infrastructure***

There are also challenges to do with infrastructure. Some students on the course are from African countries where there are critical problems, such as regular power cuts, poor Internet connection, poor access to wifi, downloading problems, difficulty in accessing websites (i.e. iTunes, Amazon, YouTube), access to apps (i.e. Kindle app), and e-books, etc. Even popular sites such as iTunes and Amazon are not accessible in all countries (such as in Sudan). Students reflected these problems in the survey.

Downloading problem:

"The most difficult problem I encountered is downloading the course Apps. In Sudan the Government restrict downloading materials from the Internet and most sites are blocked. Internet services and use are monitored by Government and downloading is difficult. After several attempts to download, it will say your request cannot be processed." (Cri\_10)

Access to apps, sites, e-books; power cuts:



"I had a problem downloading one of the e-books recommended from amazon via Kindle app. The Kindle app was not available in the iTunes Store in my region (Nigeria). Though not a problem with the course app, I'll recommend the kindle app is installed from the IT department in the school before shipping to students in Nigeria." (Cri\_6)

"Cannot access that book as an e-version from this country, constant Internet problems and power cuts, cannot download etc." (Cri\_6)

Internet connection:

"The Application is the best to use. Except for the need for wifi or internet connection: PLEASE download everything to the app: we are not allowed to have wifi and it is very difficult to access YouTube etc. in here." (Cri\_7)

For these reasons, print materials and textbooks are still welcomed by students living or working in difficult areas as these materials are not dependant on power or Internet or any kind of technology.

"Printed textbooks are handy and can be used anywhere and I find them very useful and easy to use. Downloading the e-books and reading them online are very difficult with my case due to poor Internet connectivity." (Cri\_10)

"The printed books are always better for reading as they are not dependant on a power source and they are easy to highlight and bookmark important passages you want to use in the essay." (Cri\_12)

As a response to these issues, the Department now issues 3G-enabled iPads rather than the Wifi-only model which they used in the pilot. These accessibility issues need to be considered by course providers working on a global scale.

### **Size**

iTunes imposes a limit (1 Gigabyte) on an app. This limitation has had an impact on how the resources are made available to the students. For example, some resources could have been embedded in the app, but were only made available to students as 'Wifi' because of size issues. There is also a limit on the size of video in the app. Any video longer than 8 minutes becomes a problem because of the amount of storage space required. Future course providers will need to consider these technical limitations if they adopt a similar development path.

### **Working with Digital Media**

Responses from the survey show that one-half of the respondents prefer reading course material on an iPad, and another one-half prefers reading from print. Two-thirds prefers textbooks in print, and one-third prefers e-books.

The result indicates that digital technology is changing the way students study as some found working with digital media intuitive and seamless:

"iPad is so versatile to enable multimedia usage and can be used away from Internet. Evernote even makes paper note taking less efficient in comparison." (Cri\_8)

However, for other students, print is still their primary and preferable way to study. They use the iPad as a supplement tool which enables them to continue their study while on the move or in places where there is no Internet connection. Part of the reason is due to limitations in technology. For example, cross-referencing, taking notes and highlighting were reported to be easier in print than on the iPad:

“Course material in print is more convenient while going back and forth and compare things at the same time. Blackboard is also a good place to study and look up references, previous units and next units or modules in a click. It has all the menus in a single window and so can switch from one to the other in a single click.” (Cri\_1)

“Print - as I am used to it and can go back and forth when required without remembering the page. Can also make copies for future reference” (Cri\_2)

“I prefer my material in print (yes I’m old-fashioned) because I can easily highlight and take notes as I read. It is a bit more cumbersome to do when you use an electronic media.” (Cri\_12)

This result also indicates that changing study behaviour takes time as it requires students to develop the necessary digital skills to work effectively with digital media:

“With printed material I find it easier to highlight and make notes on the material. I am getting used to this with the app but sometimes it is a bit of a "faff".” (Cri\_4)

## Key lessons

### ***Institutional Support***

Innovating within the established university system can be challenging – the use of iPads does not always fit with the existing IT strategy within a university. A number of things, such as the support for devices, purchasing and copyright were not in place when the pilot took place. The Department had to, on the one hand, try to fit innovation into the University’s existing structure, and on the other hand, make the administration of the programme seamless for the students. The pilot has enabled the University to realise that it needs to have strategies in place to support mobile learning centrally as an institution.

### ***Choice of Device***

The WiFi-only iPad was originally used in the pilot but the Department now decides to use the 3G/WiFi model due to a number of students living or working in difficult areas where the wifi connection was poor but a mobile signal was widely available. These students made a strong recommendation in the survey to use the model with 3G connectivity.

“The main reason being the WiFi connection it has. In the region where I stay and work, WiFi services are not available, where you manage to get WiFi connection through phones, it’s very slow and downloading is not even to talk about. iPad with SIM card facility is most preferred in Africa.” (Cri\_10)

### ***Preloading***

There is the possibility to preload everything on the iPad before sending it out to the students, however, the Department decided not to go down this route because of the issue of scalability. It is possible to preload devices for roughly 20 students, but this would not be feasible if student numbers went much beyond this number.

### ***Business Model***

Developing a sustainable business model is crucial for the success of innovation in the long run. A list of questions that need to be addressed are proposed below to help other departments or institutions wanting to implement mobile learning:

- How does the innovation fit with the existing IT strategy within your university?
- How do you provide IT support to students?
- Who owns the device? What if the device breaks/gets stolen?
- What if students withdraw from the course? Do they keep the device?
- How are you going to purchase the devices?
- What type of iPad should you provide – WiFi only/Cellular?
- How are you going to dispatch the device to the student? What costs will be involved in delivery? Will the device be insured while in transit?
- Who is going to develop the app? If the app is going to be developed by a company outside your university, what happens if the app developing company folds?
- How are you going to pay for the app to be developed if your department does not have budget?
- Who owns the app and what are the legal requirements of the various parties involved?
- How will the app be updated?
- How will the app be made available to the student?
- Should you make the app available on other forms of mobile platform (such as Android)?
- If you want to use an open platform such as iTunes, can all countries access iTunes?
- How can you/do you want to stop anyone downloading the app for free if you put it on iTunes?
- How do you provide e-books to students?
- What if a student already has an iPad and requests a refund?
- Should you preload the device before posting it to the student?

## Looking Ahead

### Rolling out

Based on the results from the pilot, the Department is convinced that the model of using an iPad and app is successful for distance delivery. The Department has decided to begin rolling out this model across all their distance learning programmes from 2014 onwards.

### App Improvement

In the first version, an app has been created for each module and so there are currently six apps in total, each containing material for a particular module. In the next version, the Department will combine all modules into one app.

The next version of the app will also provide more functionality, including:

- Twitter will be built in to the next version to enable more peer to peer communication.
- More functions will be built in to enable students to interact more with the Department.
- Up-to-date Adobe reader will be embedded in the app, allowing students to do annotation within documents.
- A built-in print service will enable students to send an email request to the University's print shop to request a copy of the materials and for them to be posted to the student directly (for a fee).
- More university services, such as career development will be built into the app.

## Updating Materials

The Department and app developer are working on strategies that will enable ongoing updating of the materials to be possible. The company is investigating ways in which the materials can be put on a website and the course team can then update them at anytime, independent of the app developer. Once the change on the website is completed, the app will notify the student that an update is available and they will then be able to download the new materials from the external cloud server anytime during their studies, outside of the iTunes environment.

## Appendix

**Project blog:** <http://placesmobile.wordpress.com>

### Presentations:

- A presentation 'iPads in distance learning: learning design, digital literacy, transformation' will be given by Terese Bird at ALT-C, September 2013, Nottingham.
- A presentation 'Adding mobility to distance learning', given by Adrian Beck to visitors of the Open University of China, 6 June 2013, Leicester. <http://tinyurl.com/mc6ar4f>.
- A presentation 'Making the most of mobile in learning' was given by Terese Bird and Tracey Dodman at the University of Leicester Learning and Teaching Conference in January, 2013. <http://www.slideshare.net/tbirdcymru/making-the-most-of-mobile-for-learning>
- A presentation 'Mummies, War Zones, and Pompeii: the use of tablet computers in situated and on-the-go learning' was given by Terese Bird at ALT-C, September 2012, Manchester, also at MobiLearnAsia 2012 Conference in Singapore, October 2012. <http://www.slideshare.net/tbirdcymru/mummies-war-zones-and-pompeii>.