An Investigation into Student Mobile Devices at City University, London

Evaluating the potential for mobile learning

This paper reports on the findings of a survey carried out by City University students during February 2010. The purpose of the survey was to analyse and evaluate how students are using their mobile devices*, understanding attitudes to using their mobile devices for supporting and enhancing their learning experience at City.

* For this study we define a mobile device as any portable electronic device that can connect to a network (such as the Internet).

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16th April 2010
Introduction

Mobile learning, or m-learning, describes a relatively new environment for learning which has been facilitated by the combination of advancements in wireless technology, mobile computing and intelligent user interfaces. O'Malley et. al (2003) define mobile learning as "any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies" (pg 6). The 2009 Horizon Report suggests that mobile devices will be widely adopted for learning in the next year - unsurprising given that UK mobile ownership now exceeds one per person. Smart devices (like iPhones and Blackberrys) are capable of much more than calls, with features like web browsing, running of diverse applications and location awareness becoming standard. There are already numerous commercial and institutional e-Learning packages and 'apps' for students to install and access on the go. Just as educators have been keen to exploit the 'sea-change' that saw social networking mushroom, several leading-edge higher education institutions are now co-opting students' mobile devices. The reason is clear: for any mobile technology learning initiative to work, it must make use of devices that they have in their pockets (Attewell et al., 2009).

At City, we need to consider both the pedagogic potential, and the degree to which students are both willing and able to put their gadgets to this purpose. Mobiles were previously reserved for personal and social use only. This study investigates whether students are willing to compromise by combining social use of their mobiles with formal education. Having an insight into the features of student mobile devices, how they are being used and how they may be used in future will be of benefit to several relevant projects at City, including:

1. Mobile access to City's new strategic learning environment (SLE) which covers the student Portal MyCity and the virtual learning environment (VLE) Moodle
2. Mobile access to other institutional online services such as the e-portfolio tool PebblePad
3. Mobile classroom learning technology projects which investigate the use of student mobile devices as voting devices
4. Mobile text messaging using TxtTools for sending and receiving student text messages
5. City's iTunesU podcasting project
6. The implementation of City's new wireless network

There is a clearly the potential to develop mobile learning for a variety of contexts at City. We carried out a student survey to understand which contexts might warrant further investigation.

**Methodology**

A scoping survey design was employed to investigate City University students' mobile device usage. The online survey questionnaire ran between 22nd January to 22nd of February 2010, using Bristol Online Survey (BOS). Students were encouraged to participate by having the chance of winning one of five prizes; only students with City University emails were included in the survey and the prize draw. In order to maximise the diversity of student respondents from across the University, the survey was promoted extensively online (CitySpace noticeboard, City News, Student's e-bulletin, Student's Union webpages) and offline (A4 posters in every school, A5 leaflets handed out in various locations and also via plasma screens in the University's main library and front reception desk). Additionally, the promotion was carried out in week 1 and again in week 3 of the survey. The online questionnaire was tested on all well know browsers both on PC's and mobile devices across different sites in the University and externally.

The questionnaire included 17 questions (see appendix) and 816 students (Female=51%/Male=47%) chose to respond. All schools were relatively well represented: Cass (21.8%), Arts and Social Sciences (21.4%), SEMS (10.1%), Informatics (17.1%), Law (8.9%), SCHS (19.5%). The data was checked and cleared for missing or false answers and the statistical package SPSS and Microsoft Excel were used to carry out the data analysis.

**Results and Discussion**

**Mobile device ownership**

All but one of the 816 respondents that took part in the mobile device survey said that they owned one or more mobile devices, where a mobile device was defined as any portable electronic device that can connect to a network, such as the Internet. Most respondents (n=306) fell into the 21 - 25 year old age range category, and as expected most responses came from students who were under 30 years old. There were no responses from any(127,954),(892,985)
When asking students to identify which mobile device(s) they owned, amongst the 816 responses received there were 853 different mobile phones (with some students owning more than one type of mobile phone), and of these 597 were Smartphones (including Androids, Blackberries, iPhones and Nokia / Symbian devices, see Figure 1). Smartphones are mobile phones with enhanced features that are similar to those found on a PC, such as the ability to browse the Internet, edit documents or watch movies. The ownership of Smartphones is relatively high amongst the City students surveyed. Laptops were the second most popular choice, owned by 68% (n=563) of respondents.

Figure 1: Mobile devices owned by City University students
Students were also asked to indicate how many types of non-mobile portable devices they owned. Notably 78% (n=642) of respondents said they owned a digital camera, and 66% (n=544) owned an mp3 player. The high number of students with mp3 players is important to consider for ongoing podcasting projects at City.

**Evaluating how City students currently use their mobile devices**

Students at City carry out a variety of tasks using their mobile devices (*Figure 2*). Students were asked to indicate what they had used their mobile devices for within the past 10 days; this period of time was selected to highlight differences in frequency of task over a reasonable time period. Interestingly text messaging was the most popular task over making and receiving phone calls. Web browsing was the third most popular task, with 69% of respondents citing this as an activity that they had carried out on their mobile device within the past 10 days. Unsurprisingly, social networking using services such as Facebook and Twitter were also popular amongst 58% of City students. Forty percent of students accessed CitySpace on their mobile devices which is relatively high given the CitySpace mobile phone experience which is known to be poor - it is assumed that these students may be accessing CitySpace on their laptops. *Figure 4* shows that in fact 75% (n=620) would like to access CitySpace on their mobile device if accessibility was improved. There is certainly scope to improve mobile access to the institutional VLE, particularly given the number of students who browse the web. With the ongoing replacement of CitySpace/Blackboard-WebCT with Moodle in the next year it strongly recommended that the mobile experience for Moodle access be considered within the overall context of Moodle implementation across the University.

Several lecturers at City have expressed an interest in developing recorded lectures, with some wishing to publish and broadcast them as podcasts. Thirteen percent of students who completed the survey already use their mobile device to listen to or watch podcasts, so there is certainly scope to develop teaching podcasts in line with City’s iTunesU project. The same percentage also listen to recorded talks and lectures which are not necessarily published as podcasts. Forty-four percent of student use their mobile device to watch online videos such as those available from YouTube; this is useful data since City has recently created its own YouTube channel (*mycityunilondon*), therefore the potential to exploit YouTube for teaching and learning purposes already exists.

Sixty-five percent of students said that they accessed their email using their
mobile device(s). Whilst at the outset this is a relatively high proportion, one might expect it to be higher given that: 1) Email is a pervasive means of communication in the developed world and all City students have a City email account which is promoted as the primary means of communication between the University and its students; 2) 815 of the 816 students that responded said they owned a mobile device which can access the Internet and presumably email services such as Outweb too. It may be that the email mobile phone experience is not ideal for some students, and an investigation into how City’s email service may be accessed on a variety of mobile devices is suggested to see whether it requires improvement.

A very small proportion (4%) of students currently access City’s e-portfolio tool PebblePad on their mobile device (Figure 2), however we understand that there is limited use of PebblePad at City, with SCHS and Psychology students as the main users. Currently there are WAP enabled forms which allow students to upload materials into PebblePad directly from a mobile phone, however PebbleLearning (2010) cites future plans to include a much greater level of support for mobile devices. It may be that in the absence of this support, City students who want to access PebblePad are not able to do so. Indeed Figure 4 shows that 15% (n=129) of respondents would like to access PebblePad on their mobile devices if accessibility was improved.

![Figure 2: Tasks carried out by City students using their mobile devices](image-url)
Assessing how City students might use their mobile devices in a learning and teaching context

Whilst the results in Figure 2 indicate the tasks that students already do with their mobile devices, it is useful to assess the hardware capabilities of student mobile devices to ascertain what other tasks can be done that students may not necessarily have considered or know about, particularly in a teaching and learning context.

Figure 3 shows the hardware capabilities which are known by the students about their mobile devices. Of course not all students are aware of or understand the hardware features of their mobile device and so there are limitations with what can be gained from asking students about these. However one might argue that for a mobile learning project to be a success, one must not only understand what technical features can be exploited, but also use the technical features that students have an awareness of already.

Ninety-six percent (n=784) of respondents asked cited text messaging as a feature of their mobile device(s). This is a very high proportion and would support City's efforts to further support and implement an ongoing SMS/text messaging service called TxtTools across the University. TxtTools has been shown to work in practice, both at City and other institutions for communicating to students on-the-go, quickly and efficiently. It can be used within three educational contexts: (1) for direct teaching, (2) for teaching-related activities and (3) for contact and communication around teaching (Lomine, 2009). In a direct teaching context, students can anonymously text in questions for the lecturer to collate, integrating the answers into the lecture content. Students can also anonymously text in questions throughout the lecture, enabling the lecturer to obtain feedback on how well his or her content is being received. This student-centred approach is known to work well for improving student engagement and interaction in class. It has also been found that students prefer to ask questions by SMS than raise their hand (Scornavacca et al. 2009). Figure 4 shows that 27% (n=220) students at City would be interested in using their mobile devices for asking questions in class by SMS/text. It is unknown why this figure is not higher, but studies suggest that cost to the student for sending text messages may be an inhibiting factor (Scornavacca et al. 2009). Indeed, the average cost for students per month for their primary mobile device is relatively low at £10 - £20 (Figure 5), and this must be taken into account when planning any mobile learning project that carries a cost by the student.

It is interesting to note that students would prefer to use their mobile
devices for teaching-related activities (such as viewing timetable information, receiving text alerts, grades and feedback), rather than direct teaching activities that may use mobile devices in classroom (Figure 4).

Forty-six percent (n=378) of students said that their mobile devices had a QWERTY keyboard. Given the number of smartphones and laptops that students said they owned, one might expect this figure to be higher. However, it is possible that students did not understand what QWERTY keyboard meant and perhaps this response should have been explained. Identifying the number of mobile devices with a QWERTY keyboard is important for a pilot mobile learning project at City called ResponseWare. ResponseWare describes a web-based system that uses student's mobile devices as voting devices in class. The pedagogical benefits of traditional Electronic Voting Systems (EVS) that use simplistic clickers have been widely cited for a range of disciplines in Higher Education (Bruff, 2009) and at City. However there are logistical and practical drawbacks associated with EVS, where City's lecturers have cited the time wasted in distributing and collecting EVS clickers as a major obstacle for EVS use. To overcome these, student mobile devices are being harnessed for use as voting devices instead. With ResponseWare, students with mobile devices that have QWERTY keyboards will be able to provide rich text feedback and essay-style answers to questions posed by their lecturer in a way that is easier than for students using mobile devices with non-QWERTY keyboards. Scornavacca et al (2009) cite the potential caveats of the ResponseWare approach, which include complicated and unreliable wireless configuration and technical incompatibilities across the wide-range of different student mobile devices. Scornavacca et al (2009) also argue that students may not have or be able to afford devices which are web-enabled. Our survey results oppose this latter argument since we found that amongst the respondents asked, 815 of 816 owned a mobile device which by definition is web-enabled. The question of affordability may relate to the cost to the student in accessing the Internet in order to use the ResponseWare service. However this cost can be removed if students can connect their mobile devices to the University's free wireless service.

Students were asked to indicate their preference to a range of statements about using their mobile phone in class. As shown in Figure 6, students generally opposed the idea. Forty-nine percent of students questioned (n=396) said that they did not want to use their mobile phone in class. Twelve percent of students believed that it would be too distracting to use in this way and 16% said that they did not want to use it in class and viewed their mobile as a device for staying in touch with friends and family only. Combining these percentages, one can see that a large proportion - 77% - of students questioned did not want to use their mobile phone in class. This
is consistent with the analysis in Figure 4, which indicates students' preference to use their mobile devices for teaching-related activities. Only 12% of students wanted to use their mobile in class for learning, and only 11% agreed that using their mobile in class would help them feel better equipped to work. Appendix 2 shows a series of unprompted comments from 12 students which support the sentiments of Figure 6, where students express concerns for mobile learning in the classroom related to distraction, trivialising lectures and removing the personal/human element to learning.

At City, ResponseWare is currently being piloted for lectures in three schools: CREU/Cass, SOI and SEMS, and it will be interesting to see whether following student focus groups, student's beliefs change or remain the same on this issue.

Figure 3: Known features of student mobile devices

<table>
<thead>
<tr>
<th>Feature</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>3G</td>
<td>443</td>
</tr>
<tr>
<td>Bluetooth</td>
<td>633</td>
</tr>
<tr>
<td>GPS</td>
<td>591</td>
</tr>
<tr>
<td>CMERTY keyboard</td>
<td>478</td>
</tr>
<tr>
<td>Inertial measurement</td>
<td>781</td>
</tr>
<tr>
<td>Text messaging (SMS)</td>
<td>734</td>
</tr>
<tr>
<td>Telephone calls</td>
<td>370</td>
</tr>
<tr>
<td>Voice activated commands</td>
<td>370</td>
</tr>
<tr>
<td>WiFi (wireless Internet access)</td>
<td>590</td>
</tr>
</tbody>
</table>

Figure 3: Student responses to the question: What features do your mobile device(s) have?
When asked what they would like to do with their mobile devices if accessibility was improved, 66% of students said they would like to receive grades and feedback on their mobile phones. There has been Moodle gradebook development at other institutions over the last three years enabling delivery of grades and feedback on mobile devices, therefore with the introduction of Moodle at City University we may wish to investigate the possibility of offering a similar service. Sixty five percent of students also said that they would like to be able to check CitySpace and receive CitySpace announcements via their mobile devices. This has prompted pilot projects investigating an SMS plugin for Moodle, and the issue of student mobile numbers being pulled into Moodle from SITS (City's student records system) has been raised. Seventy six percent of students said that they would like to be able to access CitySpace via their mobile devices; given that grades, feedback and innovative assessment have been outlined as priorities both at City and nationwide, this may indicate that City needs to invest in further development of Moodle for mobile devices.
Figure 4: Student responses to the question: "At present students at City University have limited accessibility to institutional systems (e.g., CitySpace, PebblePad etc.) via mobile devices. If accessibility was improved, which of the following would you use your mobile device(s) for?"
How much do you spend per month on your primary mobile device?

Figure 5: Average monthly cost for students' primary mobile devices
Connectivity at City

In evaluating the likely success of a mobile learning project, it is prudent to identify how students connect their mobile devices to a network both on the University campus and off-campus. It is useful to look at both connectivity contexts because, if there is a difference in the way students are connecting, this might indicate that habits are being forced to change because of one connectivity infrastructure not being the same as the other. We would hypothesise that mobile learning efforts would work best in situations where connectivity is easy, straightforward and invokes as little cost to the student as possible.

At the time that the survey was released, City's free WiFi service did not allow mobile phones to connect, although it did allow for laptops and
netbooks to connect. This is somewhat unfortunate as 71% (n=580) of students had indicated that their mobile devices were capable of WiFi connection (Figure 3). The survey asked students to identify their primary mobile device, and how they accessed the Internet on that device whilst on a City campus (Figure 7). The purpose of this question was to determine whether students were accessing the Internet whilst at City, and if so, with what type of device and how they were paying for this.

A significant 39% (n=322) of respondents said they did not connect to the Internet whilst on a City campus (Figure 7) and when asked to comment why this was, students cited problems with accessing the network for their mobile devices, including laptops (see Figure 8 for a wordle of their comments and Appendix 3 for a full list of student comments). A cross-tabulation of the results for survey Question 8 (Whilst on a City campus how do you connect to the Internet using your primary mobile device?) with survey Question 9 (What type of payment plan do you have for your primary mobile device?) reveals that students who do not connect to the Internet whilst on a City campus are on both Pay Monthly (n=162) and Pay As You Go (PAYG) (n=132) payment plans (Figure 9); these students may not have unlimited data access built into their contract.

Figure 7 shows that 17% (n=140) respondents only used Mobile Internet, and 13% (112) mostly used Mobile Internet when connecting to the Internet on their mobile device at City. Conversely 11% (n=94) only used WiFi, and 7% (n=60) said they mostly used WiFi when connecting to the Internet at City. Seven percent (n=60) equally used Mobile Internet and WiFi, whilst 3% (n=25) of respondents did not know how they connected to the Internet whilst on a City campus. Students who did use City's WiFi tended to be laptop users, as shown in Figure 7:
Figure 7: Primary mobile device ownership and mode of Internet access whilst at a City University campus
Figure 8: Visual summary (wordle) of frequency of students' comments relating to the connectivity of City's WiFi service
Figure 9: Relationship between type of payment plan and Internet connectivity at City
Figure 10: Relationship between type of payment plan and Internet connectivity away from home

Whilst a large proportion (39%) of students said they did not use the Internet when at City (n=322), this proportion reduced to 24% (n=199) for students when asked how they connected to the Internet away from home (Figure 10). This reduction can be explained by assessing the rise in 'Only WiFi' and 'Mostly WiFi' responses between Figures 9 and 10, and is ultimately explained by the lack of WiFi connectivity for mobile phones at City. A cross-tabulation between survey Question 5 (When away from home do you take advantage of wireless hotspots (WiFi) while you can or rely primarily on mobile connectivity when you wish to access the Internet?) and survey Question 8 (Whilst on a City campus how do you connect to the Internet using your primary mobile device?) shows that students who answered that they do not connect to the Internet at City will take
advantage of WiFi hotspots when they are away from home (*Table 1*). In both connectivity contexts, students on unlimited data contracts will only use Mobile Internet for connectivity and tend not to seek out WiFi, which is not surprising. Thirteen percent (n=13) of all students surveyed were on unlimited data contracts, and it will be interesting to see if this number rises over time as the availability of unlimited data packages become a cheaper option for students. It will certainly be useful for future mobile learning projects.

**Table 1: Comparison between two connectivity contexts**

<table>
<thead>
<tr>
<th></th>
<th>Only WiFi</th>
<th>Mostly WiFi</th>
<th>Equally WiFi and Mobile</th>
<th>Mostly Mobile</th>
<th>Only Mobile</th>
<th>I don't currently use the Internet while mobile on campus</th>
<th>I don't know</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When away from home do you take advantage of wireless hotspots (WiFi) while you can or rely primarily on mobile connectivity when you wish to access the Internet?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only WiFi</td>
<td>49</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>41</td>
<td>3</td>
<td>102</td>
</tr>
<tr>
<td>Mostly WiFi</td>
<td>24</td>
<td>26</td>
<td>6</td>
<td>12</td>
<td>14</td>
<td>36</td>
<td>0</td>
<td>118</td>
</tr>
<tr>
<td>Equally WiFi and Mobile</td>
<td>7</td>
<td>19</td>
<td>42</td>
<td>25</td>
<td>25</td>
<td>7</td>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>Mostly Mobile</td>
<td>5</td>
<td>9</td>
<td>8</td>
<td>58</td>
<td>43</td>
<td>32</td>
<td>2</td>
<td>157</td>
</tr>
<tr>
<td>Only Mobile</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>45</td>
<td>18</td>
<td>1</td>
<td>77</td>
</tr>
<tr>
<td>I don't currently use the Internet whilst mobile</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>173</td>
<td>7</td>
<td>196</td>
</tr>
<tr>
<td>I don't know</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>14</td>
<td>11</td>
<td>35</td>
</tr>
<tr>
<td>Not specified</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>94</td>
<td>60</td>
<td>59</td>
<td>112</td>
<td>140</td>
<td>322</td>
<td>24</td>
<td>811</td>
</tr>
</tbody>
</table>

**Conclusions**

The student mobile device survey, the first of its kind at City, has been prompted by developments in mobile learning initiatives. In evaluating the capabilities of student mobile devices and students' attitudes to using their own devices for teaching and learning we can lay the groundwork for mobile learning proposals that may have a high rate of success. Our overall conclusions / recommendations are:
• The ownership of Smartphones is relatively high amongst the City students surveyed, as is laptop ownership. This may be a trend that continues to rise as smartphones become more affordable, and it is crucial that we do not ignore the potential to use such devices for supplementing and enhancing normal teaching and learning activities.

• The mobile environment for existing systems at City (such as Email, the e-portfolio PebblePad and the SLE) should be monitored / developed to ensure the experience is as good and as accessible as possible.

• Mobile learning projects that centre on students using their mobile devices for receiving and viewing information around teaching should be explored. Students seem happy to use their devices for teaching-related activities or delivery of learning content, but not for interacting in class.

• Mobile learning projects should take into account the possible costs carried by the student and ideally be free of charge by allowing connectivity to a free wireless service provided by the University. This wireless service should cater for the diverse range of mobile devices owned by students and be easy to connect to.
References


Lomine, L. and Buckingham, C. (2009). M-learning: texting (SMS) as a teaching & learning tool in higher arts education. ELIA Teachers' Academy


Thomas, R. (2009) 'Open University Mobile VLE student survey: aiming to improve mobile access to online course content'. Unpublished.

Appendix 1: Survey Questions

1. Do you own any of the following mobile devices? For the purpose of this survey, we define a mobile device as any portable electronic device that can connect to a network (such as the Internet).
2. Do you own any of the following technologies?
3. Within the past 10 days, which of the following have you used your mobile device(s) for?
4. What features do your mobile device(s) have?
5. When away from home do you take advantage of wireless hotspots (WiFi) while you can or rely primarily on mobile connectivity when you wish to access the Internet?
6. Please specify your primary mobile device in the space below.
7. Whilst on a City campus how do you connect to the Internet using your primary mobile device? / Please provide an explanation for the above choice.
8. What type of payment plan do you have for your primary mobile device?
9. How much do you spend per month on your primary mobile device?
10. How long have you had your current primary mobile device?
11. At present students at City University have limited accessibility to institutional systems (e.g. CitySpace, PebblePad etc.) via mobile devices. If accessibility was improved, which of the following would you use your mobile device(s) for?
12. Select the statement that best describes you:
13. I am confident doing the following...
14. Please use the space below to provide any further comments you may have.
15. Age
16. Gender
17. In which Department at City University are you studying?
Appendix 2: A selection of student comments from Q14. relating to use of mobile devices in class

1. ...however not introducing them into lectures, because that is just an excuse for people to pull out their mobile phones and be texting their friends when they're bored. This can become distracting for others.

2. For question 13, there was no 'best' description that describes how I think about the use of mobiles in lectures/classes. I think that for the purposes of communication, mobiles are invaluable. I am a nursing student and often, I have been unable to access important placement information via CitySpace due to the limited access. By way of example the only communication from the University in these instances has been via voicemail. However, my concern regarding the use of mobiles in learning situations are that they could be used as a substitute for more direct communication.

3. I really don't think mobile phones should be encouraged to use in lectures, as people would take advantage of this and text/annoy friends in the same lecture who are trying to learn.

4. Mobile phones being used in the class is not a good idea. However if the university brought clickers that would make the lecture interactive without any distractions from other things.

5. Phones will be very helpful for voting and QUESTIONS in particular.

6. I am yet to be convinced that technology enhances the learning environment. Student/teacher is about personal interaction. The technology should be used to take care of the administrative side of being a student/teacher. i.e. providing notes on Cityspace. I think the use of any mobile device in class runs the risk of huge distraction for students and hence reduced effectiveness of teaching/learning. I would see a place for mobile devices to enable students to access course content/library more easily out of class. A strong argument could be made to set up.

7. While the use of mobile technology is a fantastic resource i think too many students would feel uncomfortable using mobile devices in class and there would always be some students who are more confident at using devices than others. Something to use in the future but not yet i think!

8. I think using technology for learning would be interesting, but I feel that it would start off quite disruptive; there are frequently problems in class computer tests so I can imagine similar problems in lectures. Doing the voting thing is kinda fun, but might end up trivialising the lectures.
9. I wouldn't want students to be encouraged to use mobile phones in class as this **would take the gist of learning out of the classroom.**

10. Using mobiles in class **would be awful**, it would **completely remove the human element** intrinsic to teaching and learning!

11. **I am very worried** about the potential use of mobile devices in the classroom. I think more focus should be spent on improving literacy and writing skills. I am a law student and still shocked at some of my fellow students handwriting and spelling.

12. The only time I wouldn't want to use my mobile device is during actual lectures or tutes as I end up **getting distracted**; but being able to **use it in breaks and before and after class would be brilliant**.
Appendix 3: Student comments to Q7 relating to the how students connect to the Internet whilst on a City campus

will not let me use city internet wifi on my phone
WiFi on campus is still in a bad shape
wifi isn't very useful on City campus. I usually find it difficult to connect to and the internet speed is usually poor
WiFi is quick and easy
WiFi is difficult to access
Where there's WiFi coverage, I use that, but it doesn't cover all of the campus (e.g. lecture theatres)
When quickly checking facebook and email account for important emails
When I need the internet I use a computer
when I cannot use the computer room, I wil use my mobile internet or mobile wifi
We cannot access internet with mobile device at Cass
wasn't aware city had an open WiFi network
Usauly I am using the computers in the campus, but sometimes my Laptop
Using the library facilities. Unfortunatly, it is impossible to connect to the wi-fi through the iPhone
Used to be WiFi until recently I couldn't access the internet through City WiFi as IT has put some sort of security device on your network which cannot be added to my iPhone.
Use the mobile to browse internet via GPRS and WAP, not via WiFi. Due to mobile internet being a part of monthly usage, so free. WiFi would cost me according to data usage.
Unlimited 3G service by service provider
Unaware that City had WiFi/ How to connect to it.
Too expensive to use carrier's internet access
too busy studying
to contant people
This is the only method I know how to use.
This is because the wifi doesn't work- when I type in my user name and password, it does not set up the connection.
There are no good reliable fast Wifi services on camps for me to connect to. Too complicated to access.
The WiFi network is not strong and always disconnects the user.Continuous loggin in and being disconnected is tiring
the Wifi in my site has a varied signal so i use it when i can otherwise i have 3G.
The Wifi coverage at City University is incosistent and poor at best
The WiFi at university is so terrible that I can never use it!!! It is the biggest disappointment of uni life and I pay £10 a month for internet tethering with
my iPhone just so I don't have to go through the trouble of accessing university networks. It's a disgrace
The Wifi at City does not support iPhone, Blackberry etc... I never been told how to connect it or use it and mostly relay on my providers connection
The screen is too small and it's painfully slow to load web pages and Java never works properly.
The laptop is quite heavy so I do not often carry it on me so instead use the computers on campus.
The City University network is unreliable and often will not connect. The yellow and green networks seem overkill - would be much easier to have one network. Note also that the green network supported anti-virus requirements are out of date and computers with more up to date software cannot get onto it.
The City University Internet does not seem to work at all with my device. th city internet doesnt work properly!!!!
Study part-time and don't have much time while on campus
sometime wifi doesn't seem to be available
Some of the city networks does not alow me to use Iphone
Since the wifi does not work in most rooms, I have bought a mobile internet stick to connect my notebook to the internet.
simply - schools wifi is always troublesome.
simple pay as you go internet
saves on data charges which i would incur if I use my mobile to connect to the internet
quickest access to the internet
Phone does not have wi-fi and do not normally bring laptop to campus with me
Only use internet on phone for urgent matters as it is quite expensive.
only use campus to attend lectures and access the library
Only use Blackberry at uni, rarely take my notebook
On my Campus (Alliance House, there's no wifi service.
On campus my primary device is not used as much to connect to the Internet. My secondary device which is my iTouch is used more for this situation because the device is better suited for this purpose in terms of how the Internet is presented and layed out.
On campus I use my laptop to surf the Internet
Not set up to access the wifi yet
Not from my mobile device. I connect from a netbook using WiFi.
Not allowed to use the Uni's WiFi. Apparently it's not configurated yet for mobile devices!!
not allowed on WiFi network, and do not have data plan to use mobile network
My UK phone isn't internet compatible and I can just access it at home.
My telephone doesn't have access to the internet. I have a laptop however with pay as you go broadband.
My primary mobile device does not have WiFi connectivity
my primary mobile device does not have wi fi and i have to pay for the 3g connection
My phone is too frustrating to access internet
My phone has no WiFi capability
my phone has no specific names
my phone has no access to the internet
my phone does not have an internet
My phone does not connect to the Internet and I do not bring my laptop to campus. If I need to use the internet, I log on to one of the computers on campus.
My phone does not access the internet and there is no reason for me to bring my laptop in.
My phone costs more money to use the Internet with.
My phone can only access email services
my package supplies me with unlimited mobile connection therefore there is no need for wifi
My mobile phone does not have WiFi.
My mobile is not set up on the university wi-fi network, I have problems trying to access it.
My BB doesn't have WiFi
Makes sense
Last time I tried, mobile devices weren't supported for City WiFi
Just use mobile phone for texting for phone calls
just use both
its not a well developed internet browser. hard to use
its easiest
It's easier to just use the internet on the mobile rather than setting up all the connections and cache servers.
it's easier and comfortable
It's a real paint to configure WiFi access for the iPhone @ City.
It works fine.
it wont let me connect to city student wifi through my iphone
it is the only way i know how to use it when i am not at home.
it is easier
It costs extra money to go on the web with my mobile, so i use the uni computers to access the internet.
In the past connecting a laptop to the university's has been troublesome. In most cases, there is no coverage either. In any case, 3G is sufficient for the majority of tasks.
in some places there are no network coverage for the university wifi
im in a lecture or tutorial or at 6th floor of library
If I want to check my emails or facebook I will use my phone. If only I bring my laptop with me I will use WIFI. If I am not doing much on the internet there is not always need to type in user details. I'm not aware of any hotspots on campus. I'm a PhD researcher, stay at the campus just for a while every week. I'd only access the internet using computers at City. I would use the computers or my internet via my laptop at home. I wasn't aware of any wifi spots in the university, hence, the use of mobile internet. I usually use the laptop on campus, but also the blackberry. I usually acess the internet on my phone in order to keep up-to-date with news and this is done easily on my phone. I used wifi connection provided by City University because it is free and it's speed is relatively fast than of the service provided me by my mobile service provider. I use wifi for my laptop. It is convinient and great. I use the university's computers. I use the university computers instead of my mobile. I use the social sciences computer lab whilst on campus for serious browsing/my Blackberry for e-mail and accessing a very few links / my diary. I tend not to use my laptop on campus due to speed of connection. I use the internet service on my mobile phone. I use the computers instead. I use my netbook to connect to the student wifi network. I use my mobiles 3g for that. I use my laptop on City campus mostly as its the most practical, fast and effective way to go online. I use mobile connection where wi-fi is not available (e.g. the Great Hall). I use laptop to connect Internet. I use computers based at the university. I use city's computers. I use a computer when i need to use the internet. I think that i dont currently need internet on my phone. I rearely need to use the internet on campus, and so I don't carry my laptop with me. I purchased a Netbook in order to access the uni network on uni days. My main reason was the lightness and ease of use. I prefer to use the computer in the libarary. I pay for oline access, so I do not use my mobile to do so. I only use my laptop to connect to the Internet via WiFi at City. I do not use my primary mobile device (iPhone) at City currently as the browser screen is too small. I only connect to the Internet using my laptop.
I mainly use my phone connection but I wish I could get cityspace on the mobile as an application. I have spoken to people and they agree if there was one for blackberry and iphone I know everyone would use.

I live a five minute walk away, so anytime I need something online I can head back to my flat for it.

I just use the university settings to my phone yet.

I haven't been able to set up a connection to CityRoamnode/Sturoam through my Blackberry. I'm not sure if it's possible.

I have used laptop in past but connecting to wifi on windows mobile is just a pain at cass (due to settings).. at home I use wifi but not at cass

I have unlimited internet on my iphone.

I have tried to use WiFi on the City campus but keep getting booted off - I was told this was a Vista problem.

I have the blackberry service connected to the internet 24/7

I have no particular need to use the Internet while mobile (I can use a PC in a lab).

I have never been able to connect to any of the wireless networks on campus. Along with my classmates, I have found this service/facility on campus highly unacceptable for a university.

I have internet on the go stick. Wi-Fi at city is horrible and in library or any group space it loses connection for me and my friends.

I have an unlimited Internet Plan on my mobile

I go to lectures while on campus and if I need to use the internet I use the PC labs. Why would I use my mobile device while on campus? It's got a finite charge after all, not to mention the small screen and no keyboard.

I found it complicated to setup. Don't normally bring laptop into uni, not there often enough to worry.

I find the City internet unreliable and can be difficult to connect to, so use mobile for realiability

I don't usually go online at uni unless I'm on the tabletop PCs.

I don't use internet over my mobile phone at all.

I don't know if my phone has internet, or how to make it work. I prefer to use a desktop or laptop, so I doubt I'd use it anyway.

I don't have wifi on my phone but I am soon to purchase a netbook which then I will use it.

I don't have mobile broadband

I don't carry anything with me that I can use to connect to the internet at the university.
I don't want to pay extra costs associated with web browsing on my phone, especially when PCs are available on campus.
I don't use the internet on my mobile.
I don't use the City internet network
I don't use my mobile for internet browsing even though it has the function because of cost.
I don't use internet access on my phone
I don't take my laptop with me.
I don't see the point in carrying my laptop into uni, and I don't like using the internet function on my 'phone because it is fiddly
I don't need it
I don't know how to connect to City network via blackberry
I don't have a mobile internet device
I don't bring my laptop on campus
I don’t know how to access the wifi in City on my I-pod
I do not usually carry my laptop on campus as I can get connected in internet through the computer labs. I use my mobile phone to connected on campus.
I do not use my phone to connect to the internet. I only access the internet via university pc's whilst on campus
I do not take my laptop to city campus
I do not pick up wireless everywhere in uni. And the only network i can connect to on my phone is "wasp portal"
I do not need the city wireless to access the internet.
I do not have the need to do so, because if I need to use the Internet I go to one of the computer labs we have available.
I do not have the internet as part of my monthly tariff on my phone and use the city computer centre to check email etc.
I do however use secondary mobile device on campus
I didn't know there was WiFi.. now i do
I didn't bother to set up the WiFi.
I connect to the student WiFi when I can.
I can't connect to City's wifi using my iPhone
I broke my laptop
I am using an old phone.
I am unsure how to connect to the University WiFi network.
I am unsure how to connect my mobile to the university's wifi hotspots as they are either too complicated to set up or the staff as the IT support are too unhelpful. One of them was quite rude when seeked his assistance to help me set up my City email account on my phone. Fortunately, another member of
I am not sure whether I can connect with WiFi using my phone
I am not sure how to set up the WiFi network to work on my mobile.
I am not an on campus student
I am not able to connect to some wifi spots in the campus
I am always in lessons
I am a distance student
Haven't figured out how to connect it to the City Uni wireless network yet.
Have unlimited internet on mobile so don't bother looking for wi-fi hotspots
Have not yet configured the WIFI for the University Network
Happy using the computers instead
From what I gather, I am unable to connect to City's wireless network from my blackberry. I know that there are quite a lot of steps to setup a laptop to use the network, I wouldn't know where to start to set it up on my device.
For laptop I use the wireless in the university but for the mobile phone I use the mobile wireless network.
Faster and stable connection

easy
Easier to use a computer rather than a mobile phone to go on the internet
During lectures in the oliver thompson theatre and time in the library i connect via WiFi at other times i rely on mobile internet
don't know how to connect
Don't know how to sign on to the city wifi
don't know how to set up access to wifi at City
don't know how to connect to wifi
DON't know how to connect it via wifi (passwords and settings and such)
Don't bring laptop to university
doesn't have internet
distance learner
Did not arrange for mobile internet connection with my service provider
Depends upon which part of the university campus I am in, only certain wifi hotspots allow me to connect, others do not
connecting laptop to the internet via WIFI
Connect to university internet when no other computers are available
City's Wifi doesn't work properly
City wifi not mobile compatible
City University WiFi doesn't allow iPhones to connect to the internet
City Roam is difficult to set up and is very unrealiable

Cass wifi to difficult to log onto
Cannot connect to WiFi on campus using the instructions for an XP device.
No instructions exist for mobile devices other than laptops.
Cannot connect to the wifi via the symbian platofrm.
Cannot connect to city's wifi using my mobile phone - I did contact the IT dept about this and they confirmed it in 2008/09.
Cannot access City Space properly through iphone. No easy access to files.
Can not connect my mobile to Unis Wifi networks.
campus internet cannot be connected to mobile
Blackberry cant connect to Cass/City wifi network, so I am told.
Because the City wifi doesn't support iPhone
Because it is free
because it doesn't have any wifi system
because I'm used to it
because I haven't been able to access city wifi. It doesn't work.

As the connectivity is weak at some parts of the campus, I prefer connecting to the internet via 3G using my Blackberry. Although I have definitely correctly set up my iPhone for use at Cass Business School, the WiFi never seems to connect properly. It shows the icon saying it has connected but is not able to download anything. In order to get emails I have to turn off the WiFi capability of my iPhone.