

Tools for entertainment or learning? Exploring students' and tutors' domestication of mobile devices

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Abstract

This paper presents findings from a research project at a school of humanities, languages and social science at a UK university that investigated staff and student attitudes towards and uses of mobile devices (smartphones, tablets and laptops). The study had a dual focus on personal and university-related uses. It applied the domestication of technology approach (Silverstone & Hirsch, 1992) to understand how mobile devices have been appropriated by users in their everyday lives, how they have become part of daily routines and spatial arrangements and what rules are being negotiated around their use. This approach was initially focused on households as units of study and on stand-alone technologies, such as the computer or video recorder, but has since then been applied to mobile technologies and educational settings. Data in the present study was collected via in-depth interviews with 18 teaching staff and six focus groups with a total of 19 students across different departments in the school. This paper presents findings on device acquisition and ownership, device use and associated meanings, as well as situating devices within daily routines and spaces. In each section, results from the staff and student data are compared. The research identified distinct uses of different devices in terms of university-related and personal uses but also areas of overlapping use. Furthermore, students and tutors associated important symbolic meanings with their devices, had incorporated them into daily routines and spatial arrangements in new ways and attempted to self-regulate use in different situations. While tutors were starting to make use of mobile devices in their teaching practice in innovative and meaningful ways, students had a less well defined understanding of the educational benefits of mobile devices. Institutional policy also played a role in shaping students' and tutors' use. Not many empirical studies exist that explore the link between educational and personal, everyday use of mobile devices. It is in this area that this research aims to make a contribution to knowledge. The findings are also of importance to practitioners and educational institutions planning to implement mobile device-based learning.

Keywords

Mobile devices, smartphones, tablets, laptops domestication of technology, students, staff learning, teaching, mobile learning, m-learning

Introduction

Mobile, hand-held devices, such as smartphones and tablets, are becoming increasingly important and more widely used in higher education – in the way students learn in and outside of the classroom and how tutors use them for teaching, research and administrative tasks. To understand the uses and meanings such devices have acquired in higher education, it is important to investigate how they fit into users' everyday lives, as they are also consumer devices. Their applications cross uses between public, i.e. work and study, and private spheres, i.e. entertainment and communication with friends and family. Smartphones, in addition to the traditional functions of a mobile phone, which are voice calls and text messages, usually have internet access and features of other multimedia technologies, such as GPS, a media player, photo and video camera, all converging onto one device that is operated via a touch screen. A tablet is usually larger than a mobile phone and can be described as a mobile computer with a touch screen display that has many of the added functions of a smartphone. Ownership of smartphones amongst young people is relatively high, and there is a rise in tablet

uptake amongst the general adult population: 90% of 16-24 year olds in the UK claim to have a smartphone compared to 66% of the adult population, and a tablet device can be found in 54% of UK households (Ofcom, 2015). Traxler (2010) argues that with more students bringing their own mobile devices into universities, there is huge potential for enhancing learning as these devices allow students to “create, access and publish” (p. 155) information quickly and easily. However, such devices also pose a threat to universities who cannot control access to and distribution of knowledge anymore. Mobile devices challenge traditional forms of delivery and acquisition of knowledge, as well as ways of working, in higher education.

This paper illuminates the use of mobile devices in a higher education context and investigates how this is linked to the use of such devices in the home environment. The aim is to find out how these two spheres are inextricably linked. The research is based on a qualitative study in a school of humanities, languages and social science at a UK university, involving interviews with teaching staff and focus groups with students. The first two authors are both tutors at said school. The study forms part of a wider research project on staff and students’ use of and attitudes towards learning technologies at the school. Investigating the humanities and social sciences is important in this context because take-up of technology-enhanced learning is lower compared to other disciplines (UCISA, 2014).

Theoretical background

The study uses a domestication of technology approach to understand how mobile devices have been appropriated by users in their everyday lives and asks whether staff and students assign similar, or different, meanings to these technologies and whether devices have a distinct use or traverse seamlessly between public and private. The domestication of technology (Silverstone & Hirsch, 1992) is a socio-cultural approach which falls under the ‘social shaping of technology’ paradigm (MacKenzie & Wajcman, 1999; Bijker, 1995). It offers a useful framework for studying the reciprocal relationship between people and technology (Hartmann, 2006) – how it affects us and how we adapt it to our needs. Users of technology are seen as active agents who make the technology useful to them rather than using it in a prescribed way (Hynes, 2009). This is described as a four phase process, comprising of Appropriation (making sense of the technology prior to purchase, then acquiring the technology and bringing it home), Objectification (how the technology is displayed in the home, on the body or in a public space), Incorporation (how the technology becomes part of existing patterns and routines, how it changes these and creates new ones) and Conversion (how the owner of the technology relates to the outside world and to other people via this technology). This process is non-linear and never complete as technologies can also fall into disuse or renewed use. The approach challenges technologically deterministic thinking which assumes that the technology is the source of change and also goes beyond earlier diffusion of innovation models which focused on early adopters as the initiators for change (Rogers, 2003). Domestication of technology was initially focused on households as units of study and on stand-alone technologies, such as the computer or video recorder, but has since then been applied to mobile technologies (e.g. Ling, 2004; Hartmann, 2013) and non-domestic settings, such as small businesses (Pierson, 2006) or university campuses (e.g. Hynes et al., 2010; Shekar, 2009). Even though Silverstone and Hirsch (1992) argue that the approach is suitable for studies in non-domestic settings, these are rare, therefore this study aims to contribute to filling this gap.

Existing empirical studies on the uses of mobile devices in higher education make reference to everyday uses, however more in-depth explorations of the link between educational and everyday, personal use are limited. For example, existing studies that only focus on the educational context investigate which psychological factors impact upon acceptance of mobile learning amongst students (e.g. Cheon et al., 2012; Mahat et al., 2012), the advantages and challenges of mobile-based approaches in learning and teaching (e.g. Gikas & Grant, 2013) or to what degree mobile devices transform academic practice (Aiyegbayo, 2014; Romrell et al., 2014). However, for mobile technologies to be appropriated successfully for educational purposes, they need to fit into teachers’ and learner’s everyday cultures. A specific technology may not be used as intended, as Caron and Caronia (2009) demonstrate in a study of learners’ resistance to podcasting of lectures: an entertainment device, the iPod in this case, does not always fit neatly into an educational context.

Methodology

Data was collected involving semi-structured, in-depth one-to-one interviews with 18 teaching staff and 6 focus groups with a total of 19 students across different departments. The interviews covered respondents’ use of ICTs (Information and Communication Technologies) in everyday life and their use of ICTs in teaching and learning. Respondents were recruited from all teaching disciplines in the school of humanities, languages and social

science: Sociology, Politics, Public Services, Philosophy, History, English, Languages and Information and Communications. The project purposely recruited a spread of tutors across different disciplines who had been using a variety of different digital tools in their teaching practice that went beyond basic use of Powerpoint or standard use of the VLE (Virtual Learning Environment) as a repository for lecture notes, hence staff participants can be counted as 'early adopters' of innovative learning tools. The students were recruited via online or in-class announcements across different departments in the school and were a self-selecting sample. The researchers had no prior knowledge of their experience of using mobile devices and their technological self-efficacy. Data collection took place between January and May 2015. The staff interviews were two hours long on average and sometimes carried out over two sessions, the student focus groups lasted for one hour on average. All interview sessions were audio recorded, transcribed and analysed thematically (Gibbs, 2007).

Findings

The findings will be presented using three themes which draw upon components of the domestication approach and its different phases: device acquisition and ownership; device usage, including types of use and associated meanings; and situating devices within daily routines and spaces. In each section, results from the staff and student data will be compared. The main interest of this paper are smartphones and tablets as these are newer devices, and meanings surrounding them are still being formed, uses defined and rules negotiated. However, respondents were also questioned about other devices they used for learning and teaching, namely laptops and desktop computers. Where relevant, these findings will also be reported in relation to smartphones and tablets.

Device acquisition and ownership

The reasons for acquiring a technological device are a critical part of the domestication approach as they constitute the first phase of meaning making even before the device is purchased, with future owners imagining how they could use a device and how it would enhance their lives.

All staff respondents owned at least a work laptop and their own smartphone. Over half of the staff respondents (n=10) owned another laptop or desktop computer which they used at home; some of them also brought this additional device into the office, preferring it to the work laptop. Smartphones were, in all cases, an upgrade from a previous model, hence the technology, and associated habits, have established themselves in the lives of the respondents over a number of years. Some respondents recalled being 'urged' by friends or family to get their first mobile phone in order to be 'contactable', others had acquired it for work purposes. The respondents used their phones to varying degrees for personal and work-related purposes. This is discussed further in the next section. Just over half of the staff respondents (n=10) also owned a tablet; six had been provided with an iPad by the university. For example, the English department had purchased an iPad for all its staff for marking of coursework, other departments had purchased iPads for staff where there was a specific need by that staff member for teaching related purposes, e.g. for developing a distance learning course or for teaching on a media production unit. Therefore, the decision to obtain such devices was taken over by the institution. This was also the case regarding the work laptops which were upgraded to a newer model by the university every few years. Respondents who did not own an iPad were not always interested in obtaining one as they did not see any immediate uses for this technology in their lives.

In the student sample, all respondents owned a laptop and a smartphone while ownership of tablet devices was lower, with only 6 of 19 students having acquired one. Especially the laptops and tablets had been purchased with educational motives in mind, i.e. to support studies at university or at college prior to that (see also Hynes & Rommes, 2006). Some of these devices had been bought by parents. Owning a laptop was seen as a necessity for a university degree, even though the university had computer labs for students to work in outside of class, and the respondents reported that all students on their course had one. Ownership of tablet devices was less common, similar to the staff sample, as discussed above. Some student respondents also reported having bought a tablet due to their laptop being too heavy to take into university on a daily basis. Laptops were therefore seen as less mobile than smartphones and tablets. They also had a shorter battery life and required access to a power point more frequently than phones and tablets, which was not always possible on campus. Smartphones were often acquired as part of an upgrade from an older to a newer model. A similar result was found in the staff sample, as discussed above.

Device usage: Types of use and associated meanings

Once a device is purchased and brought home, certain uses start establishing themselves in their owners' lives. Uses are not fixed and can change over time or migrate over to other devices. Technological devices also acquire certain symbolic meanings for their owners (Silverstone & Haddon, 1996; Bijker, 1995; Berker et al., 2006).

Among the staff respondents, use of mobile devices varied considerably, depending on how the devices fitted into the respondents' home and working lives. For some respondents, their smartphone or tablet played a central role in their technology use, e.g. the iPad for English tutors, who had been given the devices for a specific purpose, or the smartphone for some female respondents, for whom it fulfilled social, communicative functions (see also Park & Lee, 2014). For others, use was centred around their own laptop, rather than the one provided by the university, or their home computer. These tended to be more technologically confident tutors. Laptops and computers were clearly seen as the main work tools on which to carry out university-related administrative tasks, teaching preparation, assessment and research. However, mobile devices had also taken on work-like functions, including email, which was a main use, organising and managing time via the calendar functions and, especially on the iPad, reading lecture notes and marking students' written coursework. Personal use varied depending on how embedded mobile devices were in tutors' lives. The most important ones which applied to all cases were 'being contactable' in case of a home emergency and being able to communicate with family and friends. These original uses of mobile phones when they first entered the market as consumer devices were still seen as their key ones, even though mobile devices have now acquired a variety of further features. In addition to these key functions, respondents also used their phones for checking information online, accessing social networking apps, reading books, watching videos, listening to music or the radio, playing games, or taking photos and videos and, for one respondent, even self-tracking with the help of sleep and fitness apps.

The student participants saw their smartphone mainly as a personal device for entertainment, finding information, communication and social networking whereas their laptop was considered as a study tool. In the focus groups, students would always mention personal uses first when talking about what they used their phone for most. The below are typical examples of common smartphone uses, here from Focus Group 1, which were mirrored by the other focus groups:

Student 1: Snapchatting, using apps such as Facebook, Tinder, Messenger. And I use it for Google searches and calling and keeping in contact with people.

Student 2: Basically the same, internet, social networking, Skype to talk to my family in Ireland and stuff like that.

Educational uses seemed to be of secondary importance or were only mentioned when prompted by the interviewer. Educational uses included recording lectures, quickly needing to check email or finding information, as can be seen in the following quotes from a range of different focus groups:

Student 1: I use [my phone] for recording sometimes. If it's a good seminar I'll use my voice recorder so I can look back and make notes, or if it's a confusing seminar maybe.

Student 2: You can get apps for helping you reference as well, in your essays. (Focus Group 1)

Interviewer: Do you use your phone to support your studies outside class?

Student: Not really, only if I've found something really interesting and I fancied googling it on the bus... or if I needed to check an I email, I would use the [university's] app... otherwise I would use my laptop. (Focus Group 2)

Student: I would only use my phone to check emails that are important... and notes that I've taken or pictures that I've taken from my lecturer's notes. (Focus Group 4)

This is similar to the findings of Henderson et al.'s (2015) study of university students which found that digital technologies are used less frequently for purely learning related activities but more for organising and managing studies. Learning activities students in Henderson et al.'s study reported include, for example, "viewing and listening of lecture recordings" or using "digital technologies to 'research information'"(ibid., p. 4).

Some students saw a clear divide between what different devices were used for, i.e. the phone for personal, entertainment and social use, the laptop for study, research and work. Others detected an overlap:

Student 1: I think I use my phone and my laptop for completely different things. My laptop really is just for uni work unless I'm emailing, but my phone is very much personal use and my iPad is just a mix of both, so - No, I think it depends more on what I'm doing, so like if I want to go on Facebook, I'll just do that on my phone, but if I want to write an essay, I can't do that on my phone, so I'll just use my laptop.

Student 2: Yeah, I think there is just like an overlap because they're basically like the same. Because you can start something on the phone, and then I can just press a button on my laptop and it brings up the exact thing what I had on my phone and I can continue it. Yeah, I wouldn't say essays, no, especially emails or any webpage I've got on my phone, I just press a button and it comes up on my laptop. They basically are the same but as long as it's not essays. (Focus Group 2)

Students who owned a tablet used it both for entertainment and for study, as in the first quote below, or they used it as an extension of their laptop, as in the second example:

I use it for listening to music, taking notes when I don't feel like lugging my laptop around because I do have a keyboard. I watch Netflix on it. I take pictures when I go on vacation... I sometimes, I'll write my story on there or I'll plot it out or I'll use my Kindle app to read books for the courses or books that I have to review for my blog and my YouTube channel. (Student, Focus Group 4)

I just switch between using my iPad and my laptop. If all I need to do is check my emails, I'll just do it on my iPad, like if I just need to quickly send my tutor an email, I'll do it on my iPad. Or if I've been reading an article like online while I've been in uni and I haven't finished it, I'll just leave it open on the app so when I get home I can just quickly pick up where I left off. (Student, Focus Group 2)

For most of the student respondents their smartphone turned out to be their most important device as could be seen from answers to the question about which of their devices they would miss most if they lost it. They associated meanings of convenience, ease of use, contact with family and friends and a feeling of safety in an emergency situation with it. One respondent also stressed how she found it easier to communicate with people via social media on her smartphone and saw it as an extension of her identity. Whilst some students were also worried about losing their laptop if their university work was stored on it, emotional attachment to their laptop had decreased for those respondents whose content was stored remotely 'in the Cloud'. For them it mattered less if the device broke down, was lost or stolen, and university computers could also be used as a backup.

For tutors, their mobile devices had acquired meanings of being a constant companion or an assistant to help them micromanage their lives. Mobile devices were also seen as multi-functional tools, like a Swiss army knife, or even assigned magical properties by respondents awed by their technical capabilities. Some tutors had embedded their mobile devices into their lives to such a degree that they saw them as their 'everything' or a 'hub' for their whole life.

Situating devices within daily routines and spaces

Where do users keep their devices during the day and put them at night? How do they fit into and potentially rearrange daily routines? What rules and practices have established themselves around using devices in specific spaces or times of day? These are important questions from a domestication of technology perspective that help us understand how these technologies have become appropriated into users' lives.

Similarities between the tutor and the student sample could be observed in relation to smartphones. The student respondents tended to always carry their smartphone with them, take it into class, have it on or under the table, ready to check if an important message appeared.

[I keep it] as close as possible, so if I've got clothes with pockets in, it usually goes in my pocket. If not, it will be in my handbag. But whenever I'm sat down it's always in front of me. (Student, Focus Group 4)

Tutors for whom their smartphone played an important communicative function also carried it with them at most times. The trouser pocket, jacket pocket or a handbag was a typical place to keep it. It was also taken into the teaching room, to check messages during breaks. Other respondents who were less 'attached' to their phone left it in their workbag during the day if not needed. At home, some respondents carried their phone with them

at most times or left it in one specific place, such as the sofa or a shelf. During the night, many respondents put their phone on charge and had a dedicated space for this, e.g. in the kitchen or on their bedside table, the latter especially if the phone served as an alarm in the morning.

Keeping the phone on the bedside table overnight and using it as an alarm was also common among the student respondents. Furthermore, it was often the first thing they checked in the morning. It had become part of users' morning routine, like getting dressed and brushing one's teeth, but some respondents also expressed a reluctance to 'reconnect' straight away, as can be seen in quotes from Focus Group 1:

Student 1: I use it for my alarm in the morning.

Student 2: Yeah, I use mine for my alarm.

Interviewer: So do you check other things out also?

Student 3: When I wake up, I'll check Facebook and Twitter.

Student 1: I'll see if there's anything on the phone screen when I've woken up, I'll obviously check them, but if there's nothing on it, I'll wake up and do what I'm going to do...

Student 3: I look at Twitter just to wake me up in the morning like... You know, if I have a message, I tend to ignore it in the morning. Just for a bit while I get ready. Cos I'm too tired to deal with it.

Many respondents, both staff and students, recognised that the amount of time they spent on their smartphones, willingly or unwillingly, was problematic and that this could have an impact on other parts of their life, e.g. university work or general well-being. Some students said their phone was like an 'addiction' and that they used it too much. Interestingly, use of laptops or tablets was not seen as problematic. Some students tried to self-regulate their usage, e.g. trying not to use their phone in class, putting it in their bag and on silent, putting it away when studying at home or not using it at bedtime.

Yeah, I use my phone entirely way too much. It is an addiction and I am tied to it... But when I am sitting down writing, I do turn my phone off and put it across the room. I put my headphones on so I won't hear it, so I can write. Otherwise it'll distract me. (Student, Focus Group 4)

For staff, self-regulating usage was mostly concerned with trying to maintain a healthy work-life balance, especially in relation to work email. Email formed a major, and often time-consuming, part of their device usage. Smartphones and tablets were used to keep on top of email at work when away from the office laptop, 'getting through' emails during the commute or checking emails from home. The following quote highlights common tensions for staff:

It's balancing pros and cons, it's great [for] picking things up straight away. So I'll respond to email and I respond at all times, and it's probably unhealthy and I should turn it off, but it's very hard when you hear the 'bing'. (Sociology tutor 1)

In this context, institutional policy also had an impact on individual use: a few months before the fieldwork was carried out, the university introduced an IT security policy that required staff to add a passcode to their mobile devices if they had linked their work email to the phone's email app. Some staff interviewed had decided to remove the work email from their devices, others reported that email access on their phones had 'stopped working' and they chose not to reinstall it. They could still use the internet browser on their phone to access work email online, but this added an extra layer of access – which some respondents welcomed to help distance themselves from work communications while at home.

An area where rules around the use of mobile devices are in flux is use in class. Educational institutions are shifting from outright bans of mobile devices in the classroom to incorporating and encouraging their use in order to harness their potential educational benefits. Among the tutors interviewed, attitudes to use in class varied. Some tutors had explicit rules for non-use, others 'tolerated' use in class, some reluctantly, whereas others had incorporated mobile devices into learning activities:

I don't mind at all if my students have devices out in class... My observation... is that the youngsters these day can multitask and that's how they are learning... What they are doing is that they are going online to research and consulting with friends to work, collaborating. (Creative writing tutor)

I do have a problem with it where they're trying to read [an 18th Century novel on their phones]... It's when they're squinting at those screens, scrolling [through a] 300 page novel... Or they're on Wikipedia desperately trying to analyse a poem. I say, 'Put the phones away, you're not going to have that in the exam'. (English tutor 1)

Students brought their smartphones into class and admitted checking personal messages but justified this by also checking class related information. All focus groups reported that they had also observed their peers using phones in class which seemed to make it a more acceptable activity for everyone. Some students felt distracted by peers who engaged in heavier, more frequent phone use in class. Students also reported varying attitudes from their tutors, as described above, and had learned to manage different tutors' expectations and fit their own in-class use of mobile devices around this.

The tutors interviewed reported incorporating the following examples of innovative use of mobile devices in their teaching practice, listed here in order from simple to more complex tasks:

- Using a tutor tablet as a demo tool
- Using a tutor tablet for video conferencing with an external speaker
- Making podcasts of lectures available for download onto students' own mobile devices
- Getting students to use their own devices in class to research a topic
- Using classroom response systems via mobile devices (e.g. Kahoot, Socrative)
- Researching a mobile format, 'selfies', and getting students to take, share and critically analyse their own selfies
- Using student devices for accessing a electronic pinboard (Padlet) in and out of class
- Voice recording on mobile phones for pronunciation practice in language teaching
- Using smartphones to record video footage for video assessments, e.g. in a foreign language class or during a work placement
- Using university tablets for group communication (email, Facebook, Skype) in international student projects

Tutors often commented on the transformative effect the technology had on their teaching in the way that it managed to engage the students. The focus was not on using smartphones, but the transformative potential came from the services and functions that could be accessed and used by the students for the learning activity via these devices. Their educational benefits had clearly established themselves in many tutors' understanding of mobile devices.

If you ask [students] a really sensitive question, putting your hands up reveals an awful lot about you so, in this case, Socrative or Kahoot, it allows privacy... I was allowing everyone from the shyest to the most... extrovert to engage and that was amazing. (Sociology tutor 2)

Because they were contributing to this kind of – [it] seemed like a bit of magic really, they were contributing to something that everybody was going to see and that there could be a record of. They really engaged in a way that far exceeded what I'd hoped they would do, they really took to it. (English tutor 2, talking about her use of Padlet)

During the period the fieldwork was carried out, the school had a trolley of 20 tablets, specifically Apple iPads, that tutors could book for use in class, but its existence was less widely known, or staff did not know how to book the devices or felt the number was not sufficient for their class size. Only the last of the activities listed above employed these iPads. All other activities relied on students bringing their own devices into class. However, tutors did not specifically ask students to do so as they could usually rely and a sufficient number of mobile devices to be present in the classroom so that students could share these and do the activity in groups.

Feedback from student participants who had experienced mobile-device based activities in class was mixed. It has to be noted that the students were not all taught by the tutors interviewed for this study, so the following responses are not feedback on the activities listed above. Most participants in the focus groups had experienced the use of classroom response or poll systems, or being asked to search for information on their phones during class, so their responses are in relation to these tasks. Some students said they found it difficult to access the activities on their devices and to log in, they did not understand how the online tools worked or this had not

been explained to them properly. Other respondents felt that their classmates did not ‘really take it seriously’ (Student, Focus Group 2), that they could not remember what they had learnt from the activity and that it was too quick to make notes of the correct answers. However, there was also positive feedback, with students saying it was fun and engaging and a useful recap of a previous lecture. One student also said that it was better getting students to research something themselves ‘rather than being dictated to’ (Student, Focus group 3). Several respondents recognised that such activities would help engage students ‘who don’t like to speak aloud’ (Student, Focus Group 2) and it was ‘good to see other people’s ideas’ (Focus Group 6).

While there were no specific university-wide rules on use of mobile devices in class and it was down to individual tutors to set the ground rules, the university had introduced two projects that encouraged smartphone use. These were the university smartphone app, which gave students access to the VLE, their timetable, university email and other resources, and a new self-registration pilot that required Foundation and Year 1 students to register their attendance electronically, either using their own mobile device, which could be done in class, or the computers in university labs. This is another interesting example of how institutional policy can impact on attitudes towards mobile devices. Many student participants reported accessing the university app on their devices and found it useful to check class resources, however several students complained about the self-registration system as it would frequently not work due to poor Wi-Fi access in certain teaching rooms. It is possible that perceptions around this system impacted negatively on attitudes towards mobile devices in learning more generally.

Conclusion

This study has shown how mobile devices have established themselves as important technologies in the lives of university students and tutors. The findings suggest that there is a mutual, reciprocal relationship between the user and the technology, in that the users adopt those functions of the technology which fit into their lives and which serve their current needs rather than adopting the technology outright and fitting their lives around it. While ownership of laptops and smartphones was universal in the sample, fewer participants owned tablet devices. Use of mobile devices varied, depending on how embedded they were in people’s lives. There was a distinction between laptops as work and study tools and smartphones as personal devices. However, smartphones had also acquired work-like functions for staff and study-related uses for students. Tablet devices often bridged work and entertainment uses. Mobile devices played a variety of different roles in users’ lives as could be detected from users’ symbolic meaning-making around their devices. Some respondents saw their use as problematic and tried to self-impose rules, such as limiting especially their smartphone use when it had the potential to impact negatively on their study success or well-being. Rules around use of mobile devices are still in flux in classroom settings. Attitudes towards using them in class varied among staff, from outright bans to innovative educational uses, and students had learnt to negotiate tutors’ expectations. Students in this research had mixed views on educational uses of mobile devices in the classroom, shaped by institutional policy to some degree. This mirrors a finding by Jisc (2015) that students are not aware of the educational benefits of mobile devices.

The findings of the present study have important implications for educational institutions planning to implement mobile device-based learning. Even though staff and students bring personal devices into university, this does not mean that use for educational purposes will follow as a matter of course. This process is in constant flux, meanings and uses need to be renegotiated, and it takes time for the devices and their uses to become successfully domesticated within students’ and tutors’ daily lives and routines. To support this process of meaning making, universities should promote a variety of innovative educational uses that offer clear benefits which learners and educators can easily recognise.

The implication for the theoretical approach is that this study has shown that domestication of technology can be applied meaningfully in a higher education context as it highlights the importance of the link between public and private, i.e. between the educational and the domestic sphere, which mobile devices easily cross. However, as an ideal model, the domestication approach can be problematic due to the increased functionality and utility of mobile devices. New applications can be added, and the devices rarely have only one dedicated function.

Therefore, their uses are changing, fluid and dynamic, and meanings have to be renegotiated constantly in a process of renewed domestication.

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