

## How and why academics do and do not use iPads for academic teaching?

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### **Abstract**

This paper evaluated how academics, at a mid-sized UK university, used their iPads for teaching. The data were gathered using both quantitative and qualitative methods. Eighty-four academics completed a survey while 22 semi-structured interviews were conducted. Eleven interviewees reported that they used their iPads for teaching purposes and the SAMR model was employed to analyse these teaching uses. The other 11 interviewees stated that they did not use their iPads for teaching purposes and the reasons why these academics were not using their iPads are also explored in this paper. Formal pedagogical support and students' access to iPads were considered important by academics in order to use their iPads effectively for teaching.

### **Introduction and literature review**

The NMC Horizon Report (Higher Education Edition), which seeks to understand the impact of key emerging technologies in the sector, declared tablet devices, eg, iPad, to be a completely new technology rather than a new kind of lightweight laptop (Johnson, Adams & Cummins, 2013). The report also stated that these tablets provide students and academics opportunities to enhance their teaching and learning experiences in ways not possible with other devices. Apple's release of the first iPad in April 2010 kick-started the tablet revolution and these devices have now become the must-have technology in many spheres of life.

The majority of the current literature on the educational uses of the iPad is school based (Burden, Hopkins, Male, Martin & Trala, 2012; Clark & Luckin, 2013; Karsenti & Fievez, 2013). There are, however, a few iPad studies in the higher education sector that have focused on students' perceptions and usage of the device (Attard & Curry, 2012; George *et al*, 2013; Souleles, Savva, Watters, Annesley & Bull, 2014). Some have also examined how academic librarians use iPads in higher education (Aagard, Armstrong, Cooper & Nuxoll, 2013; Duncan, Kumaran, Lê & Murphy, 2013; Gadsby & Qian, 2012; Lee & Gleason, 2012), but very few research studies have explored how academics use iPads for teaching. Nguyen, Barton and Nguyen (2014) in their systematic review of the current literature on use of iPads in higher education found that these research studies were still at an early exploratory stage. Out of the 20 academic papers they reviewed, only 4 of them focused solely on academics' use of iPads for teaching, learning and administrative activities. This paper aims to contribute to this under-researched area.

The author conducted a funded research study which evaluated how academics used their iPads for academic practices at a mid-sized UK University. Academic practices for the purpose of this

**Practitioner Notes**

What is already known about this topic

- There is growing interest in the use of iPads in the higher education sector.
- There are currently few peer-reviewed research studies on academics' use of iPads in the sector.
- The iPad has the potential to be an educational game changer.

What this paper adds

- It addresses the current gap in the literature on how academics use iPads for teaching purposes.
- It provides reasons why academics who own iPads are not keen to use these devices for teaching.
- It explores how academics with little or no formal pedagogical support use their iPads for teaching.

Implications for practice and/or policy

- Institutional provision of smart devices like the iPad to academics is the first step, but formal pedagogical support is essential if academics are to use these devices effectively for teaching purposes.
- Institutions should be aware that providing iPads to academics without making provisions for students' access to these devices could constrain academics' use of the iPads for teaching.

research study were categorised as (1) teaching, (2) research and (3) administration. This paper focuses only on the 'teaching' key findings of the funded study.

**SAMR model**

The SAMR model (Puentedura, 2006) provides a framework to understand how educators progress in their use of a technology for teaching and learning purposes. The SAMR model has four key levels: Substitution, Augmentation, Modification and Redefinition (refer to Figure 1). The Substitution and Augmentation levels are categorised as the "enhancement" levels while the Modification and Redefinition levels are categorised as the "transformation" levels. Fabian and MacLean (2014) and Cavanaugh, Hargis, Kamali and Soto (2013) have used this framework to analyse the use of tablet devices (Androids and iPads) in both further education and higher education contexts (Figure 1).

**Institutional context**

The institution is a mid-sized UK university with seven academic schools. Two of the seven schools issued iPads to all their academic staff members while the remaining five schools issued iPads mainly to their senior academic staff members. The schools' rationale for this capital investment in iPads was to improve the digital literacies of their staff members.

**Methodology**

This institutional case study employed a mixed-methods approach to gather the research data. Quantitative data were obtained from an online survey, while the open-ended questions provided some textual qualitative data. The survey was created using the Bristol Online Survey platform and completion time was approximately 15 minutes.

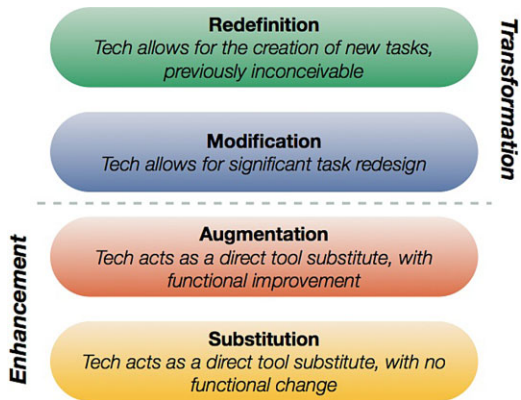


Figure 1: SAMR model (Puentedura, 2014)

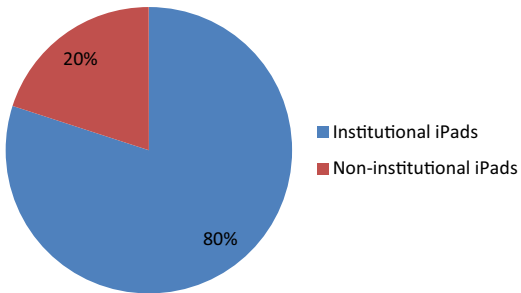


Figure 2: iPad ownership breakdown (%)

The survey was launched in December 2012 and responses were collected during a 3-month time period. Respondents were asked to submit their contact details if they wished to be interviewed and 22 academics were interviewed between February and May 2013. The interviews, which lasted between 45 and 60 minutes, were recorded, transcribed and analysed. Ethics approval was obtained from a research ethics committee and this study adhered to the British Educational Research Association (2011) ethical guidelines.

This paper addresses the following research questions:

- 1. How do academics at a mid-size UK university use their iPads for teaching purposes?
- 2. What hinders academics from using their iPads for teaching?

Results

Eighty-four academics (40 male and 42 female respondents) completed the survey and their average age was 47 years old. Two respondents abstained from stating their gender.

Eighty per cent ( $n = 67$ ) of survey respondents were issued with iPads by their schools while 20% ( $n = 17$ ) got their iPads via non-institutional means (Figure 2).

One of the key survey questions relevant to this paper was “Do you currently use your iPad for your teaching practices (in terms of design and/or delivery)?”

Fifty-four per cent ( $n = 45$ ) of surveyed academics stated that they used their iPads for teaching purposes while 46% ( $n = 39$ ) did not use their iPads to teach (Figure 3).

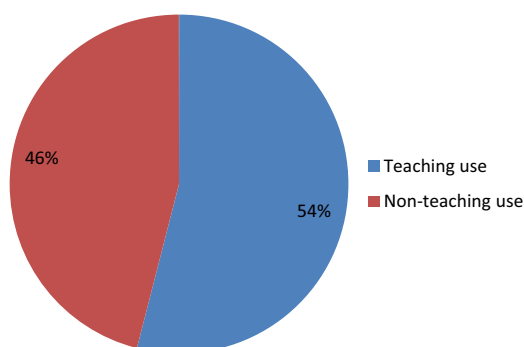


Figure 3: Survey results for teaching/non-teaching usage (%)

The author conducted semi-structured interviews with 22 academics (5 male and 17 female). Eleven interviewees used their iPads in a variety of ways for academic teaching while the other 11 interviewees stated that they did not use their iPads for academic teaching.

#### *Academics' reasons for not using iPads for teaching*

There were two main reasons why survey respondents ( $n = 39$ ) did not use their iPads for teaching. The first one was respondents' preference for other devices (laptops and/or desktops). Selected survey comments include:

No need to, I have a computer which is easier for this sort of thing.

Less easy to use and less flexible than a laptop.

Other media are more convenient.

The second reason was because respondents did not know how to use their iPads for teaching. Selected survey comments include:

I don't know how to.

No ideas how to do so yet.

Eleven interviewees also provided two main reasons why they did not teach with their iPads. The first reason was that academics were not keen to teach with their iPads because their students did not have one and they did not want to disadvantage these students.

One of the reasons I have never pushed that idea is that not all my students have iPads or tablets and if they did they might have Android. So I don't want my students to feel that they have to have these devices to come to my seminars. (Interviewee L)

Khalid, Chin and Nuhfer-Halten (2013) reported that academics in their own study also had similar concerns about disadvantaging students who did not have access to portable electronic devices like the iPad in the classroom. Some interviewees stated that they would be inclined to use their iPads for teaching purposes if their schools issued iPads to all their students or if all the students in their classes had their own personal iPads.

I'm not using it yet in actual teaching . . . I'm conscious that I'm not using it as a teaching tool, however, I think part of the problem is I'd like everyone in the class to have one. I'm conscious of inequality around technology and there is a great divide between those that have it and those that don't in the classroom. I'd like the university to issue one to every student. . . . (Interviewee M)

The second reason was because the interviewees did not know how to use their iPads for teaching purposes. This was also raised by the survey respondents.

I don't use it because I don't know how to but I'm not against learning new things. (Interviewee N)

In terms of teaching itself I haven't used it but whether that is to do with me and the fact that I don't know what I'm doing I don't know. . . . (Interviewee O)

Table 1: SAMR categorisation of interviewees' iPad teaching usage

Interviewees	iPad teaching usage	Previous teaching activity	SAMR categorisation
A (students issued with iPads)	She got her students to use the camera and video functionalities of the iPad for occupational movement analysis. The students filmed each other doing certain tasks in the classroom and worked in groups to analyse various movements from different angles.	Interviewee A would have brought into the classroom a video camera for students to record and analyse themselves.	Augmentation
B (students issued with iPads)	She got her students to download the 3D Brain app, which they accessed and used in the classroom to review the key neuro-anatomical functions and structures of the brain.	Interviewee B would have had to present images of the brain on the projector screen if she and her students did not have iPads. The use of the iPads and the 3D Brain app by the students has allowed her to get them to interact with their learning about the brain through the use of touch technology—zooming and pinching 3D images of the brain.	Augmentation
C	He connected his iPad to the speakers in the computer lab to play certain experimental music via his Spotify app for his Music students. This was because none of the computers in the lab had a Spotify account on them.	Interviewee C would have previously downloaded the music tracks he wanted and put it on to a CD to play in class. He would however be limited to only the songs on that CD whereas the Spotify app offers access to his entire music collection.	Augmentation
D (students issued with iPads)	He split his 30 students into 6 groups during his teaching seminar and gave them each a current political event to research using their devices.	Interviewee D would have provided the political topics ahead of the class for the students to research before the class. The availability of the iPads allowed his students to do live research within the class.	Augmentation
E	She used her iPad in her seminars to access relevant Internet-based resources during discussions.	Interviewee E taught in rooms that had no computer access hence she was not able to access the Internet. The use of the iPad provided the flexibility to access online resources when needed instead of having to rely on her memory or get back to the students the following week or send the information via email after the seminar.	Augmentation
F	She used the Notability app on her iPad to provide feedback to her students during teaching placement visits in secondary schools. She used a stylus pen to write down some formative feedback on an electronic observation form and also used the audio recording feature of the app to capture her feedback. Both the written and audio feedback were emailed to the students after the placement visits.	Interviewee F used electronic sheets on her iPad instead of using paper observation sheets. The use of the device to capture and provide audio feedback not just textual feedback evaluated the use of the device from simply “substitution” to “augmentation.”	Augmentation

G	She used her iPad during one-to-one tutorials with her students to provide formative feedback, which she typed up on her iPad and emailed to her students.	Interviewee G saved time using her iPad to capture and send out feedback instead of first using paper and then typing up the feedback on her desktop in order to send it to her students.	Augmentation
H	He used his iPad to record audio feedback in response to submitted student questions. These files were uploaded into the module's virtual learning environment (VLE) space.	Interviewee H saved time by speaking rather than writing his responses. There was a functional improvement in providing audio feedback instead of writing textual responses to students' questions.	Augmentation
I	She used her iPad during teaching practice meetings with her students. The interviewee typed up the discussion highlights on her iPad, emailed it to herself and edited this document on her desktop. She sent the students the edited copy as a record of the meeting with action plans.	Interviewee I still polished/edited the students' iPad feedback document on her desktop. The pre-iPad teaching practice was to write the feedback on paper and then type it up using the desktop. There is no functional improvement on previous practice.	Substitution
J	She used her iPad for assessment purposes. Her final year students presented their design portfolios to her and she typed her feedback on their presentations as well as taking pictures of the students' work using her iPad's camera. She then emailed the pictures and presentation feedback to the students from her iPad so that they had an electronic copy of it.	Interviewee J liked the functional improvement of using the iPad's camera functionality to capture images of students' design work, which was attached with the presentation feedback.	Augmentation
K	He connected his iPad to the projector in order to access and display his teaching slides.	The iPad was used as a direct substitute for a memory stick with no functional improvement.	Substitution



## Discussion

The main reasons academics (survey respondents and interviewees) were not using their iPads for teachings were:

1. Some academics preferred to use other devices, eg, laptop and desktop.
2. They had limited knowledge of how to use their iPads.
3. All their students did not have iPads.

Apple did not design the iPad to replace the laptop or the desktop but rather to complement these devices. Steve Jobs in his 2010 keynote launch of the tablet called the iPad a “third category device.” He explained that the iPad was designed to fit in the space between the smartphone and the laptop (BBC News, 2010). It is understandable that some academics prefer the use of other devices instead of the iPad for certain academic tasks, eg, long-form typing. The tablet was never designed to replace these devices.

Formal pedagogical support would have helped to address the knowledge and skills gap that prevented some academics from using their iPads for teaching. All the interviewees involved in this study received little or no formal pedagogical support. Morrison, Leah, Harvey and Masters (2014) reported that academics in their institution, even experienced technology users, wanted more formal support and guidance on how to use their iPads as pedagogical tools. Academics whose students did not get school-issued iPads could have benefited from pedagogical support as they could have been shown how to guide their students to use their own smart devices in the same way they would have used an iPad. It is worth noting that the 11 interviewees’ uses of iPads for teaching outlined in Table 1 could have been accomplished using a multitude of other tablet devices. None of the teaching-related activities was unique to the iPad.

Pedagogical support and training could have helped the 11 academics who did use their iPads for teaching to progress from using their devices to enhance (substitute and augment) their teaching to using them to transform (modify and redefine) their practices. There was no evidence of transformational use of iPads for teaching because none of the teaching tasks was either significantly redesigned or newly created as a result of using the iPad.

The three academics (A, B and D) whose students received school-issued iPads were motivated to use their devices for teaching because their students had access to these tablets. There was also the expectation from their schools that they would use the school-issued iPads with their students for pedagogical purposes.

Eight academics were also able to use their iPads for teaching purposes despite the constraints mentioned by some survey respondents and 11 other interviewees. The majority of these eight individuals were technologically savvier than the others who felt constrained by lack of student access and pedagogical support. They were able to draw from their previous experiences of using emerging technology in their teaching to get around the constraints. They used their iPads in ways that did not require their students having access to these devices, which meant that their use of the iPad was not as interactive as the three academics whose students had iPads.

## Conclusion

There is a tendency for institutions to issue devices to staff members and expect them to figure out how to use these devices on their own. The author argues, based on this study’s findings, that some academics using an unfamiliar technology would either start off using the technology to enhance (substitute and augment) what they currently do while others would not engage with the technology without the formal support they feel they need to use this technology effectively.

This paper shows that academics need pedagogical training and support from their institutions if they are going to embed iPads in their academic practices or use them in “transformational” ways

(Cavanaugh, Hargis, Munns & Kamali, 2012; Cochrane, Narayan & Oldfield, 2013; Georgina & Olson, 2008; Pegrum, Oakley & Faulkner, 2013).

It is highly unlikely that the institution would purchase iPads for every student, therefore academics will have to work around the constraint of not all students having the same device by encouraging them to bring their own devices to the classroom. This would require academics designing teaching and learning activities that work across multiple smart devices. There needs to be formal pedagogical support in order for academics to feel confident designing and delivering such teaching activities.

The author has established an iPad (and other tablets) Coffee Club based on the University of Southampton scheme (refer to Harvey & Smith, 2014) to help academics at his institution use their iPads more effectively. The Coffee Club provides the opportunity for academics to learn from their peers and a facilitator. This scheme helps supplement the current limited pedagogical support available at the institution. Future research will involve evaluating the impact of the Coffee Club on academics' use of iPads for pedagogical purposes.

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