Ipads In The University Classroom: Educational Change In The United Arab Emirates

Tamim Rana, Doiron Gilles, Colburn Linda, Attallah Fida, Essary Jessica
Dada Robin

Zayed University, UAE

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Abstract

On the 23rd of September 2012, the UAE Higher Education iPad Initiative was officially launched by His Highness Shaikh Mohammed Bin Rashid Al-Maktoum. This initiative aims to trigger substantive change in the practice of teaching and learning in the three federal tertiary education institutions of the UAE, and is one of a few undertakings worldwide to provide a massive number of students and faculty with cutting edge technology to support the learning process. The investment is enormous and the stakes equally high, and thus there is an increased impetus for educational technologists and academicians to identify best practices and critical success factors associated with the particular UAE context. As such, it is extremely important to research and document the experience as it unfolds in order to create awareness of the lessons learned and advance future efforts. What are the advantages of iPad use in the classroom, challenges facing successful integration, lessons learned and needed resources and support? What do students see as the advantages of iPad use in the classroom/on campus/ at home, and the challenges facing successful use? This paper will present a literature review on mobile learning and describe the research design and methods of an ongoing two-year investigation into the implementation strategy at one of the UAE Higher Education institutions.

Introduction

One cannot ignore the importance of utilizing technological innovations to meet the net-generations' needs in the 21st century classroom. The iPad is one of the latest in a long list of tools that has been introduced to classrooms around the world with the hope of facilitating the shift of technology's role from a delivery-tool to an enabler that enriches the learning experience. Nevertheless, numerous research findings indicate that the mere introduction of technology does not guarantee a successful move to student-centered learning. Instructors need adequate technical skills, positive attitudes, and expertise in implementing appropriate pedagogy in instructional design.

Considering the novelty of iPad's worldwide inclusion in education, the shortage of published research on best practices is understandable. While current literature addressing similar technologies may provide insights about successful practices, it is imperative to make use of different initiatives in which iPads are used in an educational context, and conduct research aimed at capturing users' insights into what works and under what conditions.

UAE Higher Education iPad Initiative

At the beginning of the 2012/2013 academic year, approximately 14,800 iPads were distributed across 17 campuses of the three Federal Higher Education (HE) institutions of the United Arab Emirates (UAE): Zayed University; United Arab Emirates University; and the Colleges of Higher Technology. This initiative may be one of very few in the world where such a massive number of students and faculty are provided all at once with cutting edge technology to support the learning process. The investment is enormous, and hence the need to identify best practices and quality assurance procedures in an effort to ensure that optimal educational value is achieved.

Currently in the initial phase of a two-year ongoing research, the authors present a preliminary literature review on mobile learning, and describe their proposed research approach and methods of investigation into the iPad initiative implementation strategy at one of the Federal HE institutions mentioned, Zayed University.

Literature review

Technology and Learning

Similar to the early hype around personal computers' ability to change the teacher's role from the *sage on the stage* to the *guide on the side* (Van Dusen, 2000), the iPad is now receiving all the attention. Portability; affordable and ubiquitous access; situated "just-in-time" learning opportunities; connection and coverage; and individualized and personalized experiences are the five affordances that give the iPad its strong edge (Melhuish & Falloon, 2010).

However, the shortage of research on iPad use is understandable and so it is necessary to check the literature on similar devices. While both laptops and mobile devices are not exactly iPads, they share some overlapping aspects with the above-mentioned affordances. The literature on mobile learning is extensive and a major focus has been

on research into its effectiveness and on trends in learning system design, with the majority of findings offering positive outcomes (Wu et al., 2012). There is an indication that mobile learning activities are successful in engaging students (Wang, Shen, Novak, & Pan, 2009), but there is no conclusive evidence relating to its impact on students' performance and attitudes.

While research supports the hypothesis that technology is beneficial for students' performance (Tamim, Bernard, Borokhovski, Abrami, & Schmid, 2011), the naïve assumption that the mere introducion of computers will lead to higher levels of interactivity and constructive learning has been refuted (Bethel, Bernard, Abrami, & Wade, 2007; Wurst, Smarkola, & Gaffney, 2008). Stronger effect-sizes are achieved when technology is used for cognitive support rather than presentational purposes (Schmid et al., 2009) and technology is used to support instruction rather than deliver materials (Tamim, et al., 2011).

The literature on one-to-one laptop initiatives is more extensive than mobile learning. A systematic review of laptop initiatives reveals that they might increase technology integration in learning; improve attitudes toward technology; and slightly increase engagement and motivation (Bethel, et al., 2007). The use of laptops has been associated with an increase in note-taking activities; collaborative in-class learning activities; communication and information sharing; resource accessibility; and improved organization (Kay, 2012; Kay & Lauricella, 2011a). However, research also indicates that individual laptops do not lead to better performance or satisfaction with courses (Wurst, et al., 2008) and may distract those using it in class and their classmates (Fried, 2008; Kay, 2012; Sana, Weston, & Cepeda, 2012). Nevertheless, a structured use of laptops has been found to minimize the distracting influence (Kay & Lauricella, 2011b).

The strongest implication to be drawn from research on laptops and mobile learning is that summarized by Weston and Bain (2010). They emphasize that addressing technology use with a replacement mentality while automating an old teaching paradigm must be avoided. Smart technology use should not be limited to replacing books with Webpages, report cards with student information systems, chalkboards with interactive whiteboards, and filing cabinets with electronic databases.

IPads and Learning

Education has always been accused of lagging behind other fields in reaping the advantages of technology. However, with Apple reporting the sale of 1 million iPads for educational purposes in 2012's third quarter (Mashable Business, 2012), things seem to be changing. This is a new terrain for educational technologists and academicians where cutting edge technology is incorporated and introduced into the classroom simultaneously with its release in the market.

A review of available literature on iPad use indicates that the majority of universities are using iPads for content presentation and delivery purposes (Murphy, 2011). However, the iPad's portability makes it ideal for use in fieldwork, for transporting documents and e-books, and for recording real-time observations and accessing references on the fly (Johnson et al., 2010). The iPad also seems well suited for

learners with special educational needs, due to its comfortable size and weight, its support for audio, and its flexibility in presenting text and images.

From a pedagogical perspective, Mouza (2008) sees the iPad as a catalyst to facilitate the movement towards constructivist educational practices, where teachers act primarily as coaches. Whether for the “flipped classroom” (Bergmann & Sams, 2012) or other forms of blended learning (Greenberg, Medlock & Stephens, 2011), iPads are being used for learning in and out of the classroom. Examples include reflections on using iPad applications to teach business studies (Lennon & Girard, 2012), for communication with students, producing video lectures, and marking assignments (Manuguerra & Petocz, 2011), for offering medical interns higher accessibility to resources (Hill, Nuss, Middendorf, Cervero, & Gaines, 2012), and providing higher accessibility to library resources (Eichenlaub, Gabel, Jakubek, McCarthy, & Wang, 2011).

Caveats

As described by Sharples (2007), mobile learning requires a paradigm shift from teachers, from the more or less stable classroom environment, to more fluid environments in which the challenge is to create enough stability to allow learning to be guided. As well, traditional assessment methods may not necessarily apply, or be suited to these new environments (Taylor, 2006). Hence, for iPads to be used in educationally effective ways, strategic and coherent supports, particularly regarding high quality professional development for teachers (Mouza, 2008), as well as information literacy skills for students is needed.

Nevertheless, while the iPad is being touted as an educational device, it has not been designed primarily for that purpose. Mobile devices, such as the iPad, are not commonly associated with more sustained, deep and formalized learning experiences; instead, device interfaces are designed to be "intuitive enough for high speed, short-term interaction" (Peng et al., 2009). For iPads to be effective, the design of educational applications must be pedagogically sound, rather than focus solely on content, engagement, or 'Edutainment’.

Mobile devices are also associated with using “cloud” (internet-based) applications and “cloud” data storage that can then be accessed from other devices or by group members when working collaboratively. These activities introduce ethical issues in terms of ownership, privacy and security of data. Also, iPad users are dependent on the Apple “ecosystem” of products and services, and Apple may gather personal data, engage in price setting, or limit access to educational sites powered by what Apple alone judges to be 'undesirable code'.

Lastly, failure to objectively assess affordances of devices for mobile learning may result in 'force-fitting' an educational experience to the device, or conversely, a failure to maximize the opportunities available. These failures could result in unanticipated undesirable consequences for early-adopter teachers trying to create learning experiences. The focus must remain on the way mobile learning can be integrated into effective, evidence-driven, innovative practices, so that the learner is empowered and enriched by the learning experience.

Zayed University and the iPad Initiative

Zayed University (ZU) is one of the UAE's Federal (HE) institutions. It is accredited by the Middle States Commission on Higher Education and in 2012 it had 472 faculty and 7,349 undergraduate students fairly evenly distributed across two campuses, one in Dubai and one in Abu Dhabi. ZU has five degree granting Colleges, a foundation program run by its University College (UC) and a pre-university prep program known as the Academic Bridge Program (ABP). Already a laptop university for over a decade, ZU campuses are Wi-Fi enabled, with wireless access in classrooms, the library and concourse areas.

The iPad initiative is currently targeted for the UC and ABP faculty and students. While the 1,818 students in ABP have already received their iPads, slightly over 3,000 students from UC will get theirs at the start of the Fall 2013 semester. ABP and UC faculty are receiving ongoing training to familiarize them with the iPad features and applications, as well as seminars on its affordances for teaching and learning.

Methodology

The current two-year project is in its initial stage. We are planning a mixed-method research design well suited to investigating how the iPad is being integrated into the teaching and learning practice within our vibrant and growing, yet conservative community at ZU. The specific research questions include:

1. How are instructors integrating iPad use in their teaching practices and for what purposes?

2. What are the instructors' perceptions about advantages of iPad use; the challenges to overcome; and needed resources and support.

3. What are the students' perceptions about advantages of iPad use; challenges to overcome; preferences for iPad use to support their needs and enhance their learning experience; and most memorable moments of learning with iPads.

The stages of the project include:

Stage-1: qualitative-data collection from ABP/UC faculty members and students. This will be gathered from conducting focus groups on defining the major themes and issues to be investigated.

Stage-2: qualitative-data analysis with the design, development, and pilot testing of surveys based on the feedback collected in the focus groups. The surveys will include Likert-scale items, close-ended questions and a few open-ended questions to investigate how the faculty members are using the iPads in their classroom instruction.

Stage-3: quantitative-data collection from ABP/UC faculty and students, and from ZU colleges' faculty. This will be coupled with qualitative data collection from interviews with selected faculty members, as well as in-class observations, which will help in providing an in-depth understanding of how the iPads are being used.

Stage-4: data-analysis and interpretation of the findings.

Stage-5: final project report and dissemination of the findings.

Participants will include ZU faculty members and students for both the qualitative and quantitative data collection stages, and ZU colleges' faculty members for the quantitative stage only.

Presently, the research group is in the process of designing surveys and interview questions, and organizing student focus groups and faculty focus groups in order to identify the issues to address. During the summer of 2013, we will analyze the focus group data, design surveys and interview questions, and pilot test the surveys in order to refine them. Submission of a paper to disseminate our preliminary findings is expected in the Fall 2013.

Conclusion

We have ushered in the 21st century with formidable ubiquitous mobile computing power, transparently connecting people and resources and irrevocably changing how we live, how we learn and how we help others learn. However, for the iPad, or any other mobile multifunctional connecting device, to become an enabler that enriches the learning experience, a structured evaluation of its implementation into the teaching and learning environment is paramount.

As we examine the deployment of iPads in HE, a concerted effort must be undertaken to expand the scope of investigations into all facets of its integration into the university classroom. While the current literature addressing similar technologies may provide insights about successful practices, due to the large financial outlays apportioned to initiatives targeting iPads for mobile learning in HE, every effort must be taken to ensure that optimal educational value is achieved.

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