Chapter 14

E-Learning Challenges for Polytechnic Institutions:
Bringing E-Mobility to Hands-on Learning

Martha Burkle
SAIT Polytechnic, Canada

ABSTRACT

Mobile technology use is a major issue in higher education institutions, and one that is increasing daily. While the new generation of students (the "digital natives") move across programs and courses, their learning expectations have started to emerge. It is with these expectations and needs in mind that educators around the world are recognizing the advantages of using mobile technologies to engage with students and make learning a more collaborative, interactive activity that can be engaged in at anytime, anywhere. Using a case study approach, this chapter explores the challenges of transforming static curricula into a mobile experience, and the ways in which these challenges were overcome within a polytechnic institution where hands-on learning takes place inside the classroom or the lab. In addition to presenting a literature review on the use of mobile technologies for teaching and learning, and an analysis of the relevance of connectivism theory to analyze students learning in the digital age, this chapter also includes an analysis of student surveys and interviews, as well as further opportunities for research.

INTRODUCTION

As 21st century students have started to arrive at colleges and universities, educators around the world have started to question whether their educational institutions are ready to respond to student needs and expectations. The reason for this hesitation is clear: these students are carrying with them an entirely different approach to learning, entertainment and life in general. The large majority of students in today's classrooms are the first generation to grow up with such a vast array of information technologies. They have spent their entire lives surrounded by and using computers, video games, digital music players, video cameras, cell phones, and all the other toys and tools of the digital age.

As such, they are known as the Net Generation, or Net Gen-ers.

This chapter is about the learning desires and expectations that the Net Generation are bringing with them when they start higher education. It is also about the possibilities that mobile technologies offer to transform teaching and learning according to the Net Gen desires and expectations. In particular, the video iPod is analyzed in detail through a case study that involves a polytechnic institution using video iPods with students in the Avionics Program.

The main objectives of this chapter are to:

1. Present and analyze learning expectations of the Net Generation of students.
2. Discuss the need to transform curricula and content from a static to a mobile experience.
3. Analyze the challenges to the role of the instructor (from a 'knowledge holder' to a 'facilitator') that the use of mobile technologies brings with it.
4. Present research about student use of mobile technologies for accessing lab procedures, and for interacting with other students (in a collaborative way) and with the instructor. This is done with a case study of SAIT Polytechnic in Calgary, Alberta, Canada.
5. Examine and discuss student learning transformation since the introduction of mobile technologies into teaching and learning.
6. Point out further research in the topic.

In a framework that looks at the future role of mobile technologies to enhance education, this chapter discusses the way in which video iPods are transforming the ways in which students learn, as well as the ways in which this learning has been able to incorporate elements of fun and play while enhancing the acquisition of skills and hands-on learning.

1. NET GENERATION, DIGITAL NATIVES: THE NEW STUDENT GENERATION IN THE 21ST CENTURY

Today's average college graduates have spent less than 5,000 hours of their lives reading, but over 10,000 hours playing video games (not to mention 20,000 hours watching TV). Computer games, e-mail, the Internet, cell phones and instant messaging are integral parts of their lives (Gibson et al, 2008; Prensky 2001; Wesch, 2007). As a result of this ubiquitous technology, a number of social scientists sustain that today's students think and process information differently than their predecessors. Even more so, their entire system of beliefs and values are different from those in previous generations, and these differences usually go further and deeper that most educators realize. These are some of the reasons why Marc Prensky has dubbed today's students "digital natives". In coining this term, Prensky is making the analogy of natives to a homeland, in this case referring to the "digital land", or the Internet. Digital natives are those who have always known the Internet and a digital environment. Others have called this new generation of students the Net Gen, where Net refers to either networking or Internet use. Whether Digital natives or Net Gen-ers, this generation was born at a time when computers were an important part of the dynamics of a home, and where the Internet had become an integral part of daily activities.

Some argue that even if the digital natives have slight differences in speech and social interactions, they are fluent in digital communication forms that are prevalent in the new land (Jukes & Dosaj, 2004; Toledo, 2007). Oblinger (2005) characterizes the "millenials" (as she calls the generation of students born after 1982) this way: "They gravitate toward group activity and social networking; they identify with their parents' values and feel close to their parents; they spend more time doing homework and housework and less time watching TV, they believe "it's cool to be smart",

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/learning-challenges-polytechnic-institutions/40737

Related Content

A Brief History of Networked Classrooms: Effects, Cases, Pedagogy, and Implications
Louis Abrahamson (2008). *Online and Distance Learning: Concepts, Methodologies, Tools, and Applications (pp. 78-100).*
www.irma-international.org/chapter/brief-history-networked-classrooms/27374

Users' Acceptance and Use of Moodle: The Community Influence
Hoda Baytiyeh (2013). *International Journal of Information and Communication Technology Education (pp. 40-57).*
www.irma-international.org/article/users-acceptance-and-use-of-moodle/99628

Effectiveness of Online Advising on Honors Student Retention and Engagement
Monica VanDieren (2016). *International Journal of Information and Communication Technology Education (pp. 51-67).*
www.irma-international.org/article/effectiveness-of-online-advising-on-honors-student-retention-and-engagement/146868

Role of the Psychological Test and Evaluation System Based on the Internet of Things in the Early Warning of Psychological Dangers of College Students
Hui Du (2023). *International Journal of Information and Communication Technology Education (pp. 1-19).*
www.irma-international.org/article/role-of-the-psychological-test-and-evaluation-system-based-on-the-internet-of-things-in-the-early-warning-of-psychological-dangers-of-college-students/321123

Connecting K-12 Schools in Higher Education
Laura A.B. Dell (2005). *Encyclopedia of Distance Learning (pp. 374-378).*
www.irma-international.org/chapter/connecting-schools-higher-education/12134