Chapter 11
Teaching Digital Natives Using Technology:
Learning Requirements, Multimedia Design Elements, and Effectiveness

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ABSTRACT

Students currently entering higher education are faced with a variety of new learning challenges and, over the course of their career in higher education, will develop a variety of skills that enable them to succeed in the workforce. Furthermore, students today use many different forms of technology on a day to day basis. As such, academic institutions are supplementing their curricula with additional information and communication technology (ICT) resources. These resources happen to include but are not limited to multimedia technology, which can be essential to students' lifelong learning needs. This chapter discusses characteristics of today's student entering higher education, ICT, multimedia learning, multimedia design elements, and perceived effectiveness of multimedia technology. Moreover, this chapter examines how these topics can help to promote workforce readiness, meaningful learning, and lifelong learning among today's technology capable students.

INTRODUCTION

Within the literature, there has been a large debate as to whether Digital Natives really exist, that there is this "new generation" of learners who use and process information differently from previous generations of learners (Prensky, 2001). Perhaps it would be impossible to say that all Digital Natives, or the Net Generation, or the Millennials, or whatever the preferred term may be, really are different without research to back up that claim. It would also be impossible to argue that all people born between 1980 and the early 2000s (Palfrey & Gasser, 2008) are "Digital Natives" and that every single Digital Native student does in fact process and use their brain differently from those born in 1976, or 1956. Whatever the research shows, however the argument is made; there is

one feature that researchers cannot ignore, these "Digital Native" students have been born into a time in which technology is commonplace. It could be argued that the presence of technology makes these people natives to the current digital world, and that these learners were born into a time when technology was available, growing up using technology, with some not even knowing they were using "technology" (Palfrey & Gasser, 2008).

Ultimately the debate about Digital Natives is one that comes with many different points of view, with some researchers saying Digital Natives do not exist, and some saying they do. Yes, this generation of students is different than previous generations when it comes to their education, their priorities, their opinions about the world, and of course without research it would be impossible to generalize all students as Digital Natives and give them specific defining characteristics just because they were born between specific intervals of time. With observation alone however, it is recognizable that learners entering higher education today are somewhat different. But how exactly are these learners different and what makes them different? These Digital Native learners were born into a time when technology was already available. Technology had started to become commonplace in the home and available for the creation of new types of learning environments, for example, The Learning Company's Reader Rabbit software.

Before presenting the research regarding Digital Natives, it can be argued that these learners use different methods to acquire knowledge and because these Digital Native learners grew up using technology, the methods for acquiring information just happen to include using different forms of technology. Nevertheless, without empirical research it again would be impossible to make such a bold statement in that all Digital Natives acquire information and learn using the same methods, because they probably don't. However, what should be realized and remembered is

that the goal of such research is not to prove or disprove if Digital Natives really "exist", but to understand how educators can provide learners with the tools they need to feel comfortable with learning, to feel motivated to learn, and to teach and show learners the benefits of how and why using certain tools, such as technology, can supplement and enhance their educational endeavors which, can ultimately prepare them for the workforce and global economy that has integrated technology into their cultures and requires learners to have a specific amount of knowledge and level of proficiency in order to successfully navigate the world in which they will eventually come to work.

Because learners today are said to learn differently because they use more technology than previous generations, it is therefore important to understand the research and the literature regarding Digital Natives and their use of technology. Additionally, it would be important to understand how using different forms of technology can not only enhance the learners educational experiences, but offer them the opportunity for meaningful learning thus learning to apply their newly found knowledge to their future academic and workforce goals. Therefore, this chapter will provide the following: (a) a review of the literature regarding Digital Natives, (b) a discussion of information and communication technology and the relationship to Digital Natives, (c) a resource for multimedia learning design principles, (d) a discussion of perceived effectiveness of multimedia, and (e) thoughts regarding how ICT and multimedia can help prepare the Digital Native student for the workforce and for lifelong learning.

BACKGROUND

The use of technology in general has grown by a large amount not only in society, but in education and in the global economy. People of all ages are using technology on a regular basis; from

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