E-LEARNING SYSTEMS AND ADAPTABILITY PATTERNS IN THE ONLINE EDUCATION

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ABSTRACT
This article describes ongoing exploratory research of e-learning adaptability patterns. In comparison to its traditional face to face counterpart, online education is perceived as more convenient, and in the vast majority of cases, less expensive, allowing those who otherwise may not be able to pursue their educational dreams an opportunity to earn their desired degree. Kaufman points out that some of the main variables within the online educational arena are curriculum and student body diversity, fast-paced self-learning experience, a shift from passive learning to an active, project-based learning model, and cutting-edge, ever-evolving innovative technologies (Kaufman, 2008). The demographic of a “typical” online student is different than his/her traditional counterpart. For example, they are older than traditional undergraduates, already with family commitments, jobs, and with female students with children a significant majority (Matthews, 1999).

The researchers ventured out to investigate and explore the adaptability patterns within the e-learning arena attempting to discover the paths deemed successful and “proper” when it comes to delivering real world e-learning applications. Some concepts, such as, Marc Prensky’s “digital native” or “digital immigrant” will be investigated in reference to e-learning adaptability variable. The article will focus on e-learning platform changes, not only focusing on technological change, but also changes in student demographics, future and current career applicability, and ever changing arena of online learning. This study will focus on the following three questions:

Which variables impact e-learning adaptability?

How is technology changing the e-learning landscape?

How is the burden of real-world applicability impacting e-learning?

KEYWORDS: Adaptability, E-learning technology, E-learning landscape, E-learning real-world applicability

INTRODUCTION

Online education has revolutionized the educational arena in the last few decades. However, the origins of this learning format can be traced much further in history. The first attempts of distance education efforts range from the first remote (correspondent) course established in 1728 Boston, 1840’s Sir Isaac Pitman’s shorthand correspondence course, 1922 radio distance course offered by Penn state, TV courses offered in 1968 by Stanford University to their part-time engineering students, 1960 linked computer terminal classrooms provided by the University of
Illinois, to finally in 1976 University of Phoenix first online class breakthrough (Dumbauld, 2014; Matthews, 1999; Smarty, 2010). While the motivation for distance education may vary from one student to another, Anna Eliot Ticknor, one of distance learning pioneers, used her funds to help women pursue their educational goals while having to take care of the household and family (History of Online Distance Education in America, 2015). In 1873, she founded “Society to Encourage Studies at Home-Ticknor's Society” creating the path for many others to follow in this arena (History of Online Distance Education in America, 2015). The first “virtual colleges” started emerging in the 1970s, with Coastline Community College offering telecourses in 1976, followed by Nova Southeastern University in 1985, and University of Phoenix offering its entire curriculum online in 1980, marking it as a beginning of the era when online education became “accessible to the masses” (Miller, 2010, par.7).

The U.S. Distance Learning Association defines online education as “The acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of distance learning” (as cited in Kaufman, 2008, par. 2008). Bebawi takes it one step further defining online education as, “the creation and proliferation of the personal computer, the globalization of ideas and other human acts, and the use of technology in exchanging ideas” (2003, par. 1). Regardless of its core definition, the concept of online learning continues to be redefined as new technologies emerge and as the new generations of students expect the learning process to be continuously innovative.

This study is exploratory in nature. The researchers explored the adaptability patterns within the e-learning arena attempting to discover which paths are described as “proper” or deemed successful when it comes to delivering a real world e-learning application. Some concepts such as Marc Prensky’s “digital native” or “digital immigrant” were investigated in reference to the e-learning adaptability variables.

E-LEARNING VS. ITS TRADITIONAL COUNTERPARTS

In comparison to its traditional face to face counterpart, online education is perceived as more convenient, and in the vast majority of cases less expensive, allowing those who otherwise may not be able to pursue their educational dreams an opportunity to earn their desired degree. Kaufman points out that some of the main variables within the online educational arena are curriculum and student body diversity, a fast-paced self- learning experience, a shift from a passive learning to an active, project-based learning model, and cutting-edge, ever-evolving innovative technologies (2008). The demographic of a “typical” online student is different than his/her traditional counterpart: these students are older than traditional undergraduates, already with family commitments, jobs, with female students with children a significant majority (Matthews, 1999). Many skeptics continue to imply that online courses” threaten the quality of instruction delivered” since they primarily focus on “the natural limitations of instructional technology such as the perceived lack of social interaction and immediate feedback, inability to address the learning needs of a diverse group of students, and lack of transparent academic activities” while other experts see it as “a great opportunity to overcome the limitations of face-to-face classroom instruction” (Gaytan, 2007, par. 7-8). Be it as it may, as of 2011 more than
6.7 million students are taking at least one online course, creating a scene where online learning promotes, “the cutting edge of pedagogical innovation and educational outreach” (Stern, 2015, p. 483). In order to properly understand some of the concepts impacting e-learning adaptability and students’ ultimate success in the course setting, the authors first decided to spend some time distinguishing and defining the digital native vs. digital immigrant concepts as described in work by Prensky (2001 and 2005).

**Literature Review**

Prensky coined the terms “digital natives” to describe students and “digital immigrants” to describe teachers (Prensky 2005; 2001). The “native” connotation refers to fluency in technology and the ubiquitous use of computers, video games, and the internet (Prensky 2005). Immigrants are those who were born in a non-technological era that have migrated to adapting to technology necessary to survive in today’s world. The immigrants can be contrasted with the digital natives who are individuals who have only known a technologically advanced and digital world (Horan, 2011). Digital natives have been raised in a digital environment that has shaped how they think, behave, and act. It is reasoned that technology usage in and out of the classroom and the acceptance of technology between digital natives and digital immigrants significantly impacts how they learn and apply information (Gu, Zhu, Guo, 2013).

Gu Xiaoqing, Zhu Yuankun, and Guo Xiaofeng (2013) remark that those generations born after 1980 constitute a distinct generation of digital natives because they grew up immersed in digital technology. Older generations of technology and internet users, digital immigrants, had to adapt to digital technologies later in life. Digital natives can be characterized by socialization habits that are primarily centered around technology; as a result, digital natives expect distinct technological usage patterns (i.e., personal social media use and synchronous written communication) to be inherent in the classroom (Hoffmann, Lutz, Meckel, 2014).

With the reliance that digital natives place on using information technology, the classrooms of today are increasingly becoming shaped and populated by digital natives. And while that might, on the face of it, suggest that technology will become the preeminent driver of instruction, it isn’t always the case. In some instances, digital natives run into more problems than their predecessors did, hampered by their limited understanding of the technology behind their technological enablers (Jackson, 2015).

Digital natives are more digitally connected than any other student demographic (Page, Mapstone, 2010). Such immersion in a technology-rich culture is said to influence their skills and interests, and the ways in which digital natives learn compared to past generations. Kelly Page and Mark Mapstone (2010) suggest that there are distinct differences between digital natives and digital immigrants. Digital natives prefer more active to passive learning, they engage in distinct information search patterns, and the digital natives have a lower tolerance for delays in information processing or retrieval.

There are downsides to being a digital native in this technologically driven era. According to Jackson (2015), digital natives do like change, but sometimes too much so. They want the latest model even if the last generation model is completely adequate to meet current needs. Jackson
(2015) also suggests that digital natives tend to use technology for their own use as opposed to using it for the greater good. This view tends to isolate digital natives into the mindset of “what can this do for me?” However, critics warn that assumptions about the digital natives’ skill and responsiveness to digital technology is not backed by enough empirical evidence (Page, Mapstone, 2010). Gu Xiaoqing, Zhu Yuankun, and Guo Xiaofeng suggest that many teachers typically have a desire for integrating new technologies into education to meet the demands of digital natives. Unfortunately, some teachers have encountered barriers, one of which was the lack of confidence and competence in the use of these rapidly changing technologies, or having negative attitudes and inherent resistance provided by those who are grounded in a more traditional pedagogy (Gu, Zhu, Guo, 2013). In order to be successful in the digital era, teachers must keep current with the latest technologies in order to meet the digital native’s needs.

**HOW DOES EDUCATION NEED TO ADAPT TO THE DIGITAL NATIVE?**

Marc Prensky (2005) offers several suggestions for educators to meet the needs of digital natives. First, it is imperative that educators engage with their students. Given that digital natives are so accustomed to instantaneous feedback, they also expect this same level of attention in the online classroom. Instructors must find ways to help students self-motivate by using engaging media to capture and keep students’ attention. Second, Prensky (2005) recommends that educators collaborate with students. Collaboration in this regard means listening to students on how best to instruct them. This may mean students identify the technological tools and other resources that can be best used for teaching more effectively. Finally, Prensky (2005) suggests that to effectively connect with digital natives, teachers must move away from the mindset of “what to learn” and migrate toward “how to learn”. With the half-life of information continuously growing smaller, teachers cannot possibly keep up with the latest cutting edge knowledge. Digital natives are aware of this, and want to know how to find the resources available to them to keep up to date. As a result of the above, e-learning will need to continue to evolve with the growing population of digital natives.

**E-LEARNING LANDSCAPE**

E-learning, ability to access the course content online through different technological tools, is defined as the “technology enhanced learning” and “educational simulations” geared towards “higher order skills, such as: analysis, synthesis, creation of knowledge” (Misut, Pribilova, 2015, p. 312; Leger et al., 2011 as cited in Bodea, Mogos, 2013). Irina Rozina and Victoria Tuzlukova define the revolution in the world of e-learning in terms of empowerment of both educators and students “mediating tools in the sense of motivation, overcoming psychological barriers, learning skills improvement” (Rozina, Tuzlukova, 2008, p. 39). Both authors recognize the value of creating a sense of community and promoting the environment based on the networking and a collaboration which at times may be seemingly difficult to accomplish in an online setting. In the article *Implementing Adaptability in E-Learning Management System Using Moodle for Campus Environment*, the authors evaluated the effectiveness of the e-learning technologies making
a determination that e-learning allows the wide variety of communication patterns making it even more efficient that the traditional academic setting in “knowledge sharing, information communication, and resource management” arena (Patil, Shaikh, 2015, par. 3).

**Variables Impacting E-Learning**

Based on the findings provided within the literature review, e-learning is impacted by a set of different variables: current student body diversity (adult students predominately pursuing an online educational path), fast-paced self-learning experience (geared more towards independent learners), shift from passive to active learning parameters (reflected in some innovative classroom techniques), flipped classroom in particular, and ever-changing demographics of online learners. E-learning “suffers” from the negative perception in that the concept of online interaction may not be as productive and/or meaningful as the face to face interactions within the traditional classroom. Wallace (2003) takes it one step further and introduces the concept of socialization in an online setting promoting the concepts of network building and community development established through more qualitative communication parameters even in comparison to a traditional classroom interaction. Hartman connects the concept of e-learning effectiveness to its relationship building component which relies on “self-awareness, managing emotions, empathy, and the ability to manage relationships in others are the province of emotional IQ” (Hartmann, 2010, p. 43) The authors observe both the quality and quantity communication patterns at their university through interactive discussion boards, chat forums, “how to do assignment” videos, grading feedback areas, including Waypoint grading software, emails, phone calls and texts (if offered). The authors of this paper will venture out to state that online teachers carry a heavier burden of being in “tune” with their students’ emotions, reading the “in between the lines” messages presented under the discussion forum and via email, and being more cognizant of students’ mindset than in a traditional setting (Zelihic, 2015). Therefore, the relationship variable and online presence variable impacts e-learning adaptability patterns quite a bit. Wade, Cameron, Morgan and Williams discuss the phenomenon of student perceptions, “of the importance of interpersonal relationships in online groups affect their perceptions of trust within the group” and how that ultimately impacts their learning experience (Wade et al., 2011, p. 383). One can logically introduce a variable of trust as another one worthy of exploration.

**Real-World Applicability**

The push to teach only the “needed skills” jeopardizes the core purpose of education, originally positioned to develop and nourish young minds, while creating life-long learners, not self-absorbed and self-centered, aware of the issues facing our society. The narrow -minded skill driven spectrum is replacing the broad-minded educational format throughout the academic world (Zelihic, 2015). Considering today’s environment of rapid technological changes, many of the “needed tools” become obsolete by the time students finish their degree or shortly thereafter. Through “teaching only the needed skills” focus, academia has created a very limited framework,
with graduates being successful only if their desired career path remains unchanged (no longer a very plausible scenario).

E-learning has very similar challenges as its traditional counterparts when it comes to ensuring relevance and applicability of the presented content. The extra layer of challenge is seemingly not being able to immediately replace an online content (for the most part) in each course (other than a full course revision) as opposed to instantaneously present students with the relevant information in a traditional classroom. However, one should not assume that traditional equals relevant. We should go no further than analyzing some old textbooks still used in a traditional setting versus having systems where information can be replaced with relevant articles on a daily basis. The key is to have one point of contact, whether a course developer or another individual who has access to the course content and can easily replace and add to it if needed. If the proper process is in place, there is no fear that online content can assure its relevancy through announcements, online chat feature, discussion board discussion and many other available options even if the core course shell cannot be easily replaced. In their seminal work, Ellis and Kuznia (2014) suggest that if done correctly, e-Learning can lead to higher levels of task performance.

**Closing**

In the venue of this particular article, the authors explored the variables impacting the ongoing exploratory research of the e-learning adaptability patterns. The article touched upon the e-learning platform evolution, briefly reflecting on the history of online learning, technological changes and changes within student demographics. This study attempted to define the variables impacting e-learning adaptability, changes impacting e-learning landscape and the burden world of education, online environment being no exception faces when it comes to real-world applicability. The adaptability parameters of Prensky's digital native vs. digital immigrant were explored and evaluated through literature review. In conclusion the authors recommend exploration of variables of relationship building, trust, relevance, and reference in reference to concept of e-learning adaptability.
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