Chapter 17

Interactive Learning Environments: A Three–Tiered Model Toward Digital Fluency

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ABSTRACT

The promise of technology to meet student learning demands, increase employer demand for digital fluency, and provide faculty with a platform for student-centered teaching has fallen short. Colleges must examine new ways to train faculty to use technology in tandem with pedagogy. This chapter illustrates a three-tiered model to close this gap in digital fluency among college faculty, in order to enable a more engaging and student-centered experience for faculty-learners and the students they teach. The three-tiered model, adapted from a blended learning pilot, incorporates critical constructs in technological pedagogical content knowledge integration, the technology acceptance model, and phased faculty development, while offering user-friendly access to digital tools which are appropriate for each tier of the model.

INTRODUCTION

For learning to be student-centered, it must ultimately meet student needs regarding the quality and outcomes of the learning experience. In the area of digital fluency, these expectations often fall short, especially in higher education. College and university students expect technology to be a part of their learning environment and employers expect college graduates to be digitally fluent (Duncan-Howell, 2012, p. 828). These expectations collide with a gap in professional development opportunities which are provided to faculty in higher education (Johnson et al., 2013). Lecture is still the dominant form of teaching among college faculty, even though a learner-centered approach to teaching is known to be more
effective (Smith & Valentine, 2012). The gap between student expectations and normative pedagogy is also predictable, given that colleges and universities have not prepared faculty to integrate technology into teaching practice. In fact, many colleges maintain systems that continue to isolate technology from pedagogy. This isolation works directly against learner-centered, interactive teaching methods and leads to low levels of digital fluency among faculty (Hunter, 2015).

The lack of digital fluency among faculty is complicated by what Prensky (2012) referred to as the “digital natives” (p. 76) that comprise many of today’s students. Prensky found that digital natives prefer graphics to text. They access information randomly, expect instant gratification, and are adept at multitasking. Technology is integrated in the digital natives’ daily lives through its accessibility; they carry laptops, cellphones, or tablets in pockets and backpacks (Prensky, 2012). In contrast, the majority of the instructors who are assigned the responsibility of teaching digital natives did not grow up in the era of Google (Prensky, 2012, p. 70). Prensky (2012) labels faculty as “digital immigrants”, those whose own experiences as learners relied heavily on memorization, with step-by-step directions and linear thinking, to succeed (p. 69).

As digital immigrants have started to assimilate and some of the digital natives have entered the workforce, the line between digital natives and digital immigrants has begun to blur. However, the seamless integration of technology into most classrooms that engage and personalize learning for digital native students in ways they have come to expect is still far away. Further, most college and university instructors enter the education arena as subject matter experts (Manning & Johnson, 2011), missing pedagogical expertise as well as technical knowledge. As faculty begin their careers in education, they encounter a techno-centric approach to professional development in their institution. Colleges and universities focus on technology tools, not on teaching or how technology and pedagogy can be integrated into their classroom (Harris, Mishra, & Koehler, 2009). The authors believe a core integration of subject matter, pedagogy, and technical knowledge, which Briggs and Makice (2012) defined as digital fluency, is essential for student-centered learning. Faculty digital fluency, they claim, is a critical skill in creating student-centered learning environments and enables the course designer or instructor to make seamless and intuitive digital choices that fit the learning goal, the context, and, most importantly, the student. Further, fully fluent instructors embody a willingness to experiment with new technologies as they are needed (Briggs & Makice, 2012). Experimentation enables a flexibility in approach, which, in the authors’ view, is essential for personalized learning, as it puts students at the center of pedagogical decisions.

This chapter presents a three-tiered training model1 to promote digital fluency and to help mitigate the gaps between subject matter, pedagogy, and technical knowledge, so that faculty can acquire the skills to create online student-centered learning environments. The authors’ research shows integration to be a successful avenue to move instructors away from the still dominant lecture format of teaching among college faculty (Smith & Valentine, 2012). The model has been piloted in a blended format with adjunct and full-time faculty from seven key industries: business information and technology, nursing, health occupations, service, general studies, and manufacturing, engineering, and transportation. The participation of faculty in the above-mentioned pilot increased confidence in the use of technology, provided a more robust understanding of the role of community in online learning, and demonstrated how to use technology to increase student engagement. Further, participants have demonstrated the ability to create learner-centered content and have reported delivering more engaging courses as they applied new-found digital fluency to instructional practice. Clarity of connections between technology, pedagogy, course content, and student engagement led to increased technology adoption (Hunter, 2015) and confirmed Keengwe, Kidd, and Kyei-Blankson’s (2009) findings that instructors will use technology applications
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