Chapter 3

Lessons from Constructivist Theories, Open Source Technology, and Student Learning

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ABSTRACT

There has been a great deal written about the three subjects discussed in this chapter. One of the challenges, however, is establishing meaningful links between the first two, constructivism and open source, so that the synergism between them can provide faculty with the tools to create the best possible learning environment for students. Herein, therefore, we examine these connections, first by an overview of how students acquire information and thus learn about themselves and others in the 21st century. From here, the discussion moves on to shed light on the deeply-rooted need of individuals to understand themselves and the world through dialectic, that is by investigating truths through discussion. Intrinsic to this task is an examination of the impact of technology on those interested in pursuing teaching and learning through open source platforms: How, for example, has technology abetted or truncated that dialogue in education? We then follow the linkages between constructivism and open source to examine how both link up to provide support and pedagogical assistance to student learning. The chapter concludes with examples of how the author has integrated constructivist philosophies with open source technology to establish a collaborative and effective learning environment for college students.

INTRODUCTION

Twenty-first century students, characterized at different times and places as the x, y, or, z generation or whatever run of the alphabet happens to be today's current fashion, think of themselves as

communicators in cyberspace. For this generation, the worldwide social networking system places young people at the vanguard of communicating about who they are—their identity, knowledge of others, social interactions, and understanding of world events—with their contemporaries in real time. Equally important to these students is the ability to filter all they do through their digital

social networking, which can literally span the globe.

The need for electronic verification of self through social networking may represent the purest form of Erving Goffman's theory of how individuals present themselves to their peers, i.e., by creating digital self-impressions. We know that learning may occur in many ways, including personal exchanges and direct observations For example, the best way to a learn a language is to interact in an environment where others speak the language and you are able to use that language to connect with people and produce successful outcomes. In a real way, we are re-learning the art of conversation through social networking, where communication may be less poetic and more truncated but where students are comfortable—and, yes, happy. Concomitantly, we are moving away from lecture halls, cafeterias, etc., and learning and socializing within our digital communities.

Students attending today's colleges and universities are looking for and often indeed requiring the same personalization, connection, and flexibility in their educational experience. Because garnering and assimilating information in today's world are instantaneous activities, forward-looking companies like Google and Apple have developed and incorporated social networking into their vision and production. For instance, Google, through its recent addition of a function entitled "scholarly articles," provides its users with built-in academic references. In another example, Apple's iPod revolution is leveraging the business of teaching and learning with its creative iTunes U. In 1990, Apple launched its first TED (Technology Entertainment Design) Talks conference in California to facilitate, in part, building alliances with learning institutions and being responsive to the educational needs of students. Now an annual conference devoted to the sharing of innovative ideas through its own website, YouTube, and iTunes, the conference continues to clarify the dynamics and challenges of the growing collaborations between social

networking and educational success. No doubt, these powerful cooperative relationships will result in exciting learning outcomes as today's students become more competent with integrating social networking into learning experiences and classroom lessons. In fact, having the ability to select any topic of interest within a matter of minutes, listen to lectures, view videos, or download relevant research information spawns new learning strategies; furthermore, using this multi and mixed media to learn and synthesize new information fosters the potential for community learning by sharing student responses online, e.g., by postings on Wikipedia. In an environment of instant information, students are searching to become more involved and empowered and thus are receptive to change that allows for greater creativity and flexibility. Being able to be proactive in communicating their identities and knowledge in their own voices and connecting and contributing these voices to a larger arena and having them become a part of a larger context will, I believe, have a salutary effect on student outcomes. Patricia Hill Collins (1990) writes about this need to voice the "I" and communicate it to the "we": "So the voice that I now seek is both individual and collective, personal and political, one reflecting the intersection of my unique biography with the larger meaning of my times."

Therefore, the faculty who are truly interested in engaging students in active learning must embrace technology as the new medium of communication and use this medium as a way of teaching and helping students progress from the individual to the collective. Beyond simply representing an avenue for communicating ideas, the medium is one where new ideas can emerge. Technology is a compelling resource for students because it offers them much more than information acquisition: it is a responsive educational "opportunity" for students to become active participants in the creation of knowledge. But simply having the technology and the various sources obviously is not enough, particularly if the technology is not wedded to a

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