Chapter 110
MOOCs and the Challenges They Pose to Higher Education

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ABSTRACT

Technologies come and go at an alarming rate, and the length of time any one technology exists before being supplanted by a newer technology is growing even shorter. In colleges and universities, this rapid technological replacement rate can hold immense implications for both the development and delivery of education. When technology transience is considered, institutions of higher education look at how specific incarnations of technology come and go, the length of time they are in existence, and their use within a given context. And because education has historically been so closely intertwined with technology, it becomes an investigation into not only education but also lifespan development, societal adaptation, and a myriad of other factors in which technology driven international universities will exist and or cease to exist.

TECHNOLOGY IN EDUCATION

As educators advanced into the 21st century, we realized that teaching, especially teaching adult learners, is completed not only in the traditional classroom, but also in the electronic classroom, or what is called "virtual environments". Since technology can provide convenience and flexibility, adult learners try to maximize their learning via technology. Malcolm Knowles predicted that teaching of adults in the 21st century would be delivered electronically (Knowles, 1975). His prediction was warranted as more and more universities have begun to deliver courses via technology. One logical inference as to why Knowles made such a precise prediction is that mature learners cannot come to the traditional classroom to receive their education and training because of their multiple work/family responsibilities. Yet, they must retool their knowledge and skills in order to survive and thrive by continually updating their skills and coping

with changing demands in the job market. Knowles further predicted that the de-institutionalization of education, in the form of open and independent learning systems, would create a need for learners to develop appropriate self-directed learning skills. Students entering into these programs without having learned the skills of self-directed inquiry will experience anxiety, frustration, and, often failure, and so will their teachers (as cited in Wang, 2005, p. 35). Self-directed learning skills will help mature learners learn in the virtual environments where they have no face-to-face meetings with course instructors.

However, there are potential drawbacks of learner centered MOOCs such as the danger of learners forming themselves into echo chambers, in disregarding resources with which they disagree, of importing fake news as resources, the danger of students trolling, flaming or bullying other learners, of the blind leading the blind, of wasting time on poorly or incorrectly formulated research questions, and generally degenerating into dysfunction. Teacher-centered models do not eliminate those dangers and may be worse if the instruction degenerates into propaganda, but by noting these potential issues (albeit briefly) designers may be more alert to them and build structures to mitigate these dangers.

The purpose of this chapter is to dialog about traditional (pedagogical) teaching and innovative (andragogical) teaching so that both learners and instructors can determine whether andragogical online teaching is a better fit than pedagogical online teaching. Without knowledge of pedagogical or andragogical teaching, instructors may find it difficult to "prescribe" the right instructional design, let alone the right teaching methodologies in virtual environments. Although scholars and researchers recognize the distinction between the education of adults and the education of children, step–by-step guidelines for andragogical teaching need to be provided. More importantly, practitioners in the field may want to follow andragogical teaching steps in order to achieve effective teaching of adults online. Educators can measure and observe student learning outcomes in behaviorist terms; however, andragogical teaching may prove to be a more powerful tool in helping adults learn in the electronic classroom

Theoretical Framework

Traditional teaching methodologies (e.g., Tyler's 1949 four fundamental questions for curriculum development) were derived from Skinner's behaviorism (1968). Behaviorism's influence on instructional technology "led to the design of piecemeal instruction with immediate feedback and reinforcement, drill and practice procedures, and self-paced programmed instruction (as cited in Dewald, 2003, p. 48). As Dewald (2003) further indicated, behaviorist instructors made an effort to measure learning outcomes. They also want student learning outcomes to be observable and measurable. Educators who base their practice on behaviorist assumptions tend to believe that if they fail to measure and observe student learning outcomes, students have failed to learn.

Among other modifications, Anderson and Krathwohl's (2001) revision of the original Bloom's taxonomy (Bloom & Krathwohl, 1956) redefines the cognitive domain as the intersection of the Cognitive Process Dimension and the Knowledge Dimension. Although the Cognitive Process and Knowledge Dimensions are represented as hierarchical steps, the distinctions between categories are not always clear cut. For example, all procedural knowledge is not necessarily more abstract than all conceptual knowledge; and an objective that involves analyzing or evaluating may require thinking skills that are no less complex than one that involves creating. It is generally understood, nonetheless, that lower order thinking skills are subsumed by, and provide the foundation for higher order. Bloom's (1956) taxonomy of educational objectives (based on behaviorism) informed educators' practice for decades and yet chil-

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