Learning Theories: Connectivism

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Overview

Fifty years ago, learners could go to school, immerse themselves in a topic, and then enter into a lifelong career. In that time period the development of information was slow, and the life of knowledge lasted many years. Today, after the introduction of the internet, knowledge is growing and dying at a much more rapid pace. "The half-life of knowledge is the time span from the time knowledge is gained to when it becomes obsolete. Half of what is known today was not known 10 years ago. The amount of knowledge in the world has doubled in the past 10 years and is doubling every 18 months...to combat the shrinking half-life of knowledge, organizations have been forced to develop new methods of deploying instruction" (Gonzalez, 2004). Hence, there has been a movement towards online learning, training, and working, since these are the best means of keeping up the pace of knowledge delivery with knowledge discovery.

In recent years, a new group of learners that are considered part of the 'digital native' or the 'net generation' have surfaced. Their wealth of interactions with modern communication technologies have changed the way in which they think as well as their interests and capabilities. Since human experience is infinitely varied, there exists a vast number of approaches to media in general and learning in particular (Downes, 2010). A child that has grown up reading (whether in books or on a screen) will think and learn differently from a child raised on TV shows or a child raised on Facebook, Twitter, and Instagram.

Because of the ever expanding resources on the internet and the explosion of information in recent years, learning is no longer in complete control of the learner. The idea of being connected through technology has brought a change in learning environments, innovations, and changes in the disciplines of study themselves (Anderson, 2008).

Siemens (2004) outlined some new trends in learning culture:

- People will move into a variety of fields during their lifetime, some of which may be unrelated
- Formal education is no longer the majority of our learning. Learning now occurs through communities of practice, personal networks, and work-related tasks
- Learning is not longer limited to schooling; it is a continuous process.
- Technology is rewiring our brains by shaping the way that we think.

- Both the individual and the organization are learning organisms.
- Processes once handled by learning theories can now be delegated to or supported by technology
- Instead of just "know-how" and "know-what", learning now involves "know-where" and understanding the most efficient way to find knowledge online.

Connectivism tries to address these new learning trends in a meaningful way that can facilitate the efficient transfer of knowledge in a digital age. "Knowledge that resides in a database need to be connected with the right people in the right context in order to be classified as learning" (Siemens, 2004). For example, people who are very well-connected in a social network are able to foster and maintain knowledge flow by reaching an increased number of individuals and organizations. Overall, the cycle of knowledge transfer goes from person, to network, to organization, and then back to person, always gaining for information along the way.

In online learning, the knowledge that was once organized, distributed and controlled by the teachers and organizations should now be replaced by a presentation of information that can be flexible to meet current needs. The necessity of intermediaries and institutions to facilitate learning is in decline. Vast online knowledge resources may make self-organization of learning a reality; the barrier separating students from teachers is being broken down. "For the 'download generation', the internet is no longer the medium for learning; it is the platform and the center of personal study" (Bessenyei, 2008).

Implications for the Classroom

- Complete knowledge of a topic cannot exist in the mind of one person alone. As machines are becoming "smarter" with each new step in technology development, some knowledge will reside in machines and some in humans (Siemens, 2004). The challenge for educators, then, is to **design instruction for both humans and machines** and provide an efficient means for the two to interact.
- Educators should use the principles of connectivism to guide the **development of effective online learning materials**. The digital age does not need a new stand-alone theory, but it needs a model that integrates the different theories in such a way that they are applicable to online learning materials. (Anderson, 2008).
- The newest generation of students are generally immersed in or familiar with social media and online collaborative tools. Instructors would benefit from adapting their teaching strategies to reflect the new **technology-based way in which students learn**.
- One strategy for flexibility is for instructors to create and lead scheduled face to face study groups and allow students to attend on a drop-in basis. This type of format appeals to students that need extra face to face time while allowing more independent learners the freedom to decide whether or not to take advantage of these meetings (Siemens, 2008).

- There are three questions to ask yourself about course content that reflect the tenets of connectivism: Is it useful? Is it relevant? Is it interactive?
- Even if technology is not being used, the principles of connectivism can still be applied through group work and class discussion. The teacher should act more as a facilitator than an instructor while students determine fact from fiction through their interactions (opposed to new ideas being dictated to them).

Teaching Strategies that support this Learning Theory

- Gamification
- Game-based Learning
- Teaching with Social Media
- Problem-based Learning

Technology Tools that support this Learning Theory

1. OneDrive
2. Interactive eLearning Modules
3. For audience participation, use Polleverywhere

On the Web

- "The Networked Student" (a video)
- Connectivism: Socializing Open Learning
- Connectivism in the Classroom

In the Library

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