Unit 6 Theory to Practice: Connectivism in Undergraduate Online Learning

Rosa Conti

Post University

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Dr. Jennifer Wojcik

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Introduction

Learning theories in education describe how learners receive, engage, and process information cognitively to become new knowledge. Instructors and course designers need to understand the underlying principles and overall framework of learning theories to make better-informed decisions about learning delivery. In other words, because theoretical frameworks offer different and sometimes overlapping approaches to learning, recognizing their aspects can help one to think critically about best practices for understanding how learning minds work, knowledge is created, information is used, and learning takes place. There are many learning theories of which principles lend value and support to human learning and instruction, such as Jean Piaget's Cognitive Development Theory, Lev Vygotsky's Social Development Theory, Jerome Bruner's Constructivism Theory, and John Seely Brown's Cognitive Apprenticeship Theory, to name a few. The analysis of this paper will focus on the theoretical view of connectivism, proposed by George Siemens and further advocated by Stephen Downes.

Connectivism

Researcher George Siemens first introduced the Theory of Connectivism as "a learning theory for the digital age" in a 2004 online article, which was later updated in 2005 (Corbett & Spinello, 2020). The idea behind connectivism is that no person is the keeper of all knowledge of any topic. Therefore, learning cannot be maximized if it involves one sender delivering static information to a learner population of receivers. Instead, Siemens advocates that when a group of learners (called "nodes") comes together collectively (into a "network"), their contributions and sharing of combined knowledge, ideas, questions, concerns, and debates ignite and empower higher thinking and learning. For example, connectivism encourages learners to collaborate on different viewpoints and perspectives regarding problem-solving, decision-making, and making

sense of information, sometimes resulting in new meanings and views entirely. This theory is self-directed, flexible, and student-centered, which means it promotes group collaboration and discussion and provides opportunities for students to make choices about their learning (Mallon, 2013).

In a pre-Internet world, such academic networking could occur only through analog avenues, such as expanded research based upon the works of other researchers, reading, written communications, or face-to-face encounters. However, Siemens' connectivist theory leverages contemporary technology and its large amounts of globally accessed data. It highlights the abundance of social learning opportunities made possible by modern computers and the Internet. Because this theory's context exists in the epoch of technology, Siemens' approach favors "learning that happens outside of an individual, such as through social media, online networks, blogs, or information databases" (WGU, 2021). In other words, connectivism is facilitated within the electronic connections that exist between people over digital peer networks, such as social media and online forums. Learners are invited to participate in the construction of ideas and meaning-making.

Lastly, Stephen Downes, who later partnered with Siemens' theory, describes connectivism as social learning in a network of diverse technologies, as in "knowledge that is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks" (Downes, 2007, as cited in Duke et al., 2013, p. 6). Downes upholds Siemens' belief that new learning occurs within the connectivism theory when a community interacts with different perspectives (Downes, n.d.). Both Siemens and Downes are synonymous with the Theory of Connectivism, which deviates from a traditional learning method of "sage on the stage" (King, 1993), where an instructor imparts lectured knowledge to a passive learner who simply takes notes and memorizes the content.

Context of Application

Environment

The remaining focus of this paper will explore ways in which online undergraduate adjunct instructors can use technology to evoke connectivism to bring students together and create new learning opportunities in a virtual classroom. The idea is not that the void of real-life interaction is an impediment in online learning and one must work harder to create dynamic interactions but that the existence of technology is an improvement to traditional face-to-face learning and thus enhances opportunities to develop a collaborative, connectivist environment when learning virtually. Below are a few excellent examples of ways that online instructors can craft a socially connected process of learning that "connects, builds, improves, grows, and advances" (USC: Learning and Teaching, 2014) learners in a way that allows them to "purpose course content in ways they find important to their context, relevance, and interest" (UOC, 2011).

Connectivist Activities

Social Learning

Today's technology enables countless ways to blend information with other data to create a new idea or suppose a different meaning within an online learning environment; blogs, podcasts, social media platforms, wikis, and YouTube videos are just a tiny sampling of the vast methods available. There are many ways to initiate creative collaboration online. One idea is for an instructor to leverage an LMS' discussion board feature or video tool by selecting a topic, dividing the class into two teams, and creating an (unjudged) "debate tournament" where proposition and opposition sides are presented. This would encourage students to think critically, work collaboratively, consider diverse opinions, and form new ideas using new media

devices. It also allows learners to see new connections between ideas and concepts and expand

their thinking, which are core proponents of connectivism. Another idea is to host a class video

event where students are asked to share "one interesting or new thing" learned that week, and

everyone would be encouraged to question or comment to deepen their understanding. Siemens

(UOC, 2011) believes that when learners are given the freedom and tools to connect as

individuals and thinkers, they can better explore, shape, and adapt the information to their own

purposes.

Jigsaw Teamwork

Connectivism focuses primarily on learners interacting with one another and sharing

information that often remodels one's thinking and ideas to drive their learning process.

Technology plays a meaningful role by providing dynamic digital spaces for students to create

cooperative learning. As one concrete example, an instructor can employ a "jigsaw strategy" in

class projects by grouping students into research-conducting teams who will become subject

matter experts on a topic and then share their presentations with the other groups. For instance,

one group of students can explore healthy foods and their impacts on the body, while another

investigates harmful foods and their implications. Student teams can use one or more of the

array of digital tools available: discussion boards, wikis, video, and other collaboration

applications to research and present their findings to each other. Alternatively, students, still in

groups, can collaboratively create digital timelines, websites, or virtual reality worlds that

coincide with course topics being learned. Karacop (2017) recommends that working with a

Jigsaw technique is one of the best ways to actualize learning and social behaviors. He further

states that "jigsaw teamwork brings cooperation to the forefront by providing support to

students' working together and removing competition in the classroom" (p. 421). In other

words, when students exchange ideas, they can broaden their understanding of the topic, and the need to combine data and planning tasks enhances a connectivist learning setting even further.

Reflective Instruction

Self-reflection is essential to learning because it metacognitively helps to identify one's strengths, weaknesses, and opportunities for improvement. Beyond this, group reflection is a way to build peer trust and notice insights that benefit the class with future group projects. This is an avenue where online instructors can cultivate by initiating "networked" discussions. In other words, similar to the aforementioned social learning example, the teacher can select a topic or pose a debatable concern and encourage students to "think out loud," pick apart elements, and add their own pre-existing and newly formed ideas, which can result in novice or new meanings. These open-share idea sessions in social spaces external to the fixed course curriculum would encourage students to "take concepts and form conceptual connections to deepen understanding (…) beyond what we already know (…) to round out perspectives" (USC: Learning and Teaching, 2014).

Gamification

Another connectivist approach is to infuse gamification into online learning. Gamification is widely known to increase engagement and motivation in learners, and it heightens opportunities for peer interactions when done as a group. For example, research shows that "PBL elements" (points, badges, and leaderboards), levels, and feedback are the most commonly used elements for gamifying e-learning systems in higher education (Khaldi et al., 2023). Therefore, online instructors can facilitate weekly game-based learning quizzes to test learning topics. Individual or team competitions can accrue throughout the course culminating in

the last winning week of the course. Learner teams could take turns developing the weekly quiz questions, which would further deepen student-centered learning in a connectivist environment.

Conclusion

Connectivist learning works best when students collaborate using technology and digital channels, and there are many ways to maximize students' online interactions with the ubiquitous influences of digital tools. A connectivist student environment allows for connections to deepen, knowledge to be exchanged, and a broadening of critical thinking in an open, safe space where no idea is wrong and all ideas are welcome.

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