

Constructivist Teaching Patterns and Student Interactions

Michael S. Miller-First, Ed.D., *Higher Education Consultant*

Kristin L. Ballard, Ph.D., *University of the Rockies*

ABSTRACT

The constructivist learning theory, which refers to the idea that learners construct knowledge for themselves, can have a positive impact on online-learning environments when focusing on adult learners. Within this constructivist learning environment, we are able to create a place where learners can work together and support each other as they use a variety of tools and information resources in their pursuit of learning goals and problem-solving activities. This article presents information about constructivism as a learning theory, constructivist teaching, and the formation of a learning environment that promotes meaningful and authentic activities that help learners develop skills relevant to problem-solving as opposed to merely navigating a strictly instructional environment. While there are several ways to apply constructivism in the online classroom, here we explore five simple, easy-to-use constructivist-based teaching methods with real-classroom examples that include interactive learning, facilitative learning, authentic learning, learner-centered learning, and high-quality learning.

Keywords: *constructivist teaching, student interaction, online learning, constructivism, interactive learning, facilitative learning, authentic learning, learner-centered learning, high-quality learning, jigsaw*

Introduction

Although its roots date back to the 1930s, constructivism as an educational philosophy really did not become prominent until the early 1990s. There were five basic principles identified in the research conducted at

that time (Dunlap & Grabinger, 1996; Savery & Duffy, 1996). These principles include: (1) learning is an active process of meaning-making gained from our experiences and interactions with the world; (2) learning opportunities arise as people encounter situations that involve cognitive conflict, challenge, and

through planned problem-solving; (3) learning is a social activity which involves acts of collaboration, negotiation, and participation; (4) reflection, assessment, and feedback are embedded within learning activities; and (5) learners take primary responsibility for their learning.

In its most basic sense, the constructivist model of learning posits learning as a process of constructing or making something. The premise of the model is that people learn by making sense out of the world. In other words, they make meaning out of what they encounter. As mentioned, the essence of constructivism is that students actively construct knowledge. Ultimately, constructivism is the philosophical and scientific position that knowledge arises through a process of active construction (Mascolo & Fischer, 2010). The core element of this assumption is that learners interpret new information using knowledge that they have already acquired. Learners activate prior knowledge and try to relate new information to knowledge they already possess. By doing so, understanding subject matter is a function of knowledge construction and transformation, not merely information acquisition and accumulation (Blumenfeld, 1992).

A Constructivist Learning Environment

The notion that students control their learning is at the heart of the constructivist approach to education. Therefore, it is imperative

that we develop classroom practices and deliver the curriculum to enhance the likelihood of student learning. However, controlling what students learn is nearly impossible. The search for meaning takes a different route for each student. As educators we have great control over what we teach, but far less control over what students learn (Brooks & Brooks, 1999). Even when we structure classroom lessons and curriculum to ensure that all students learn the same concepts at the same time, each student still constructs his or her own unique meaning through his or her own cognitive processes.

The search for understanding motivates students to learn. When students want to know more about an idea, or a topic, they put more cognitive energy into classroom investigations and discussions and study more on their own (Canestrari & Marlowe, 2013). As educators, priorities of ensuring that all students learn the same concepts, we carefully analyze students' understandings, and customize our teaching approaches are essential steps of educational reform that should result in increased learning. But these priorities require a paradigm shift.

Brooks and Brooks (1993) identified five central tenets of constructivist teaching, which parallel the five principles of constructivism. The first is that constructivist teachers seek and value students' points of view. Secondly, constructivist teachers structure lessons to challenge students' suppositions. When educators permit students to construct knowledge that challenges their current

suppositions, learning occurs. Third, constructivist teachers recognize that students must attach relevance to the content and curriculum. As students see relevance in assigned activities, their interest in learning grows. Fourth, constructivist teachers structure lessons around big ideas, not small bits of information. Finally, constructivist teachers assess student learning in the context of daily classroom investigations. Students should demonstrate their knowledge every day in a variety of ways.

Promoting Meaningful and Authentic Learning

Learning is considered meaningful when it is generalizable, functional, and durable (Zitter, De Bruijn, Simons, & Cate, 2011). Generalizable refers to learning that is associated with different contexts, situations, and tasks. Functional learning is learning that makes us act differently. Last, durable means that learning is recorded in our long-term memory and we can access it at any time.

It is important that teaching based on these ideas involves understanding two key characteristics of the learning process: (1) durable learning is only possible when attention, practice, and repetition are united; and (2) all things learned are either associated with the subject, the tasks, the interaction with others, or the physical setting where they have been taught. The further transfer of this knowledge to other subjects, tasks, interactions or spaces is not achieved spontaneously and must

be taught (Vandekar, 2015). The onus is on the educator to create and facilitate learning experiences that attend to these notions.

Authentic learning has also been referred to as real-life learning. Instead of vicariously discussing topics and regurgitating information in a traditional industrial age modality, authentic learning engages all of the senses and encourages learners to create tangible, useful products worth sharing with their community. Once an educator provides a motivational challenge, he or she must nurture and provide the necessary criteria, planning, timelines, resources and support to accommodate this kind of student success. The teacher becomes a guide on the side or an event manager: a facilitator not a dictator. Facilitated processes become the predominant force while assignments are real-life or simulated tasks that provide learners with opportunities to connect directly with the real world beyond the classroom.

Constructivism in the Online Learning Environment

The online learning modality offers an abundance of unique opportunities for constructivist teaching and learning methods. A common struggle with online instruction is keeping students engaged in what they are learning in an online (often asynchronous) platform rather than a traditional face-to-face (synchronous) class setting (Carwile, 2007). While it is important to provide students with ways

to stay engaged with the material, this can be a challenge.

The use of constructivist learning techniques and activities naturally engages the receptive online student differently than with objective learning. Woolfolk (1993, as cited in Koohang, Riley, Smith, & Schreurs, 2009) states, “the key idea is that students actively construct their own knowledge: the mind of the student mediates input from the outside world to determine what the student will learn. Learning is active mental work, not passive reception of teaching” (p. 92). But quite often, in constructivist learning, students are interpreting and processing the constructs and world views of their peers, especially in face-to-face classrooms. Learning online can be particularly advantageous, deep and meaningful to students as they process their own constructs of new knowledge at their own more personalized pace.

Easy-to-Use Constructivist-Based Teaching Methods

As aforementioned, there are five simple, easy-to-use constructivist-based teaching methods, which include interactive learning, facilitative learning, authentic learning, learner-centered learning, and high-quality learning. There are a number of unique ways of applying constructivist teaching in a course with an online student population.

One way to apply constructivist teaching to a course is by way of the

jigsaw technique. The jigsaw method is the division of students into several groups where each group is assigned the same general topic, but assigned a different aspect of that topic. By assigning the same general topic, along with different subtopics, different perspectives can be explored (Media Merge—Teachers’ Toolbox, n.d.). For example, if students are studying the topic of adolescence in an Introduction to Lifespan Development course, they can be divided into three groups where each group is, respectively, assigned the following: socio-emotional aspects of adolescence, physical aspects of adolescence, and intellectual/cognitive aspects of adolescence. The groups can research and analyze their topics, discuss subtopics asynchronously in a discussion forum, or synchronously via Skype or FaceTime chats, and then reconvene together as one larger group to collaborate and synthesize the material from multiple perspectives. This prompts a discussion of the similarities and differences of the content, leaving a meaningful and lasting learning experience (Koohang et al., 2009). The jigsaw method and methods similar to it can provide a highly collaborative activity that offers a deep and lasting retention of the material (Schell & Jann, 2013). Accountability is inherently built in as each small group member must become an expert on the subtopic, or aspect, in order to have larger class discussions with others. The group members become experts on the assigned or selected aspect and have a stronger anchor to which connect information about the other aspects.

Another method of applying

constructivist-based teaching to a course is to utilize peer learning, which simply refers to *learn by teaching*, where the students are learning from their peers and also by teaching their peers (Shultz, Ballard, & Hemerda, 2015). The peer learning approach is broad and can take many forms as a teaching and learning method, but a simple and effective way is to work with an open-ended discussion question that applies high-level Bloom's Taxonomy (i.e. evaluate, synthesize, etc.) to create a forum where the material can be applied (Media Merge—Teachers' Toolbox, n.d.). For example, have students in an abnormal psychology course studying the topic of personality disorders to each choose one of the 10 personality disorders listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and *teach* others what they learned and share their perspectives and thoughts on the etiology, diagnosis, treatment, etc. Students can include a character from a book or movie displaying traits of the personality that they selected and *teach* their peers what brought them to this conclusion, thus applying the material. This method can promote a high-quality and engaging activity for learners.

Providing presentation opportunities that allow students to *apply* learning is a deep and meaningful way for mastering and understanding the material (Koyanagi, n.d., as cited in, Carwile, 2007). One example requires students to conduct informational interviews with professionals in their chosen career fields. Then, students report back with presentations on what

they learned during the interview process. They should include discussing any pre- and post-interview research they conducted.

Finally, another simple way to apply constructivist learning opportunities in a class is through *self-checks* that are correctable in the online course room. Students can identify and fix their errors independently (Media Merge—Teachers' Toolbox, n.d.) and become more self-sufficient and empowered learners. There are a myriad of other ways that students can learn through authentic, constructivist activities that help them develop skills relevant to problem-solving as opposed to merely functioning in a strictly instructional-focused environment.

Conclusion

In much of the literature, the use of constructivist teaching approaches in the learning environment is geared toward children. However, there is overlap with pedagogy and andragogy. Clearly, constructivist teaching patterns can be applied at the post-secondary level as well. When adults experience the same book or movie, and are asked to describe it, they will certainly come up with very different conceptions. When we ask adults about the meanings of concepts in general, very different constructs will be evident. In other words, we all construct our own meanings in individualized ways. In online classrooms, educators can leverage this and use teaching methods, as described above. Doing so, helps to elicit inter-

pretation of the material being studied, and allows “the learner and the teacher to detect misconceptions, errors, and omissions in learning and correct these” (Petty, n.d., p. 1). As aforementioned, this premise of the model is that people learn by making sense out of the world; they make meaning out of what they encounter. The essence of constructivism is that students actively construct knowledge.

References

- Blumenfeld, P. C. (1992). Classroom learning and motivation: Clarifying and expanding goal theory. *Journal of Educational Psychology, 84*, 272–281.
- Brooks, J. G., & Brooks, M. G. (1993). *In search of understanding: The case for constructivist classrooms*. Alexandria, VA: ASCD.
- Brooks, M. G., & Brooks, J. G. (1999). The courage to be constructivist. *Educational Leadership, 57*(3), 18–24.
- Canestrari, A. S., & Marlowe, B. A. (2013). *Educational foundations: An anthology of critical readings*. Thousand Oaks, CA: Sage.
- Carwile, J. (2007). A constructivist approach to online teaching and learning. *Inquiry, 12*(1), 68–73.
- Dunlap, J., & Grabinger, R. (1996). Rich environments for active learning in the higher education classroom. In B. G. Wilson (Ed.), *Constructivist learning environments: Case studies instructional design* (pp. 65–82). Englewood Cliffs, NJ: Educational Technology Publications.
- Koohang, A., Riley, L., Smith, T., & Schreurs, J. (2009). E-learning and constructivism: From theory to application. *Interdisciplinary Journal of E-Learning and Learning Objects, 5*, 91–109.
- Mascolo, M. F., & Fischer, K. W. (2010). The dynamic development of thinking, feeling, and acting over the lifespan. In W. F. Overton (Ed.), *Biology, cognition and methods across the life-span*. Volume 1 of the Handbook of life-span development, Editor-in-chief: R. M. Lerner. Hoboken, NJ: Wiley.
- Media Merge—Teachers’ Toolbox. (n.d.) *TeachersConstructivist teaching strategies*. Retrieved from http://www.teacherstoolbox.co.uk/Constructivist_Teaching_Strategies.htm
- Petty, G. (n.d.). Constructivist teaching. Retrieved from <http://geoffpetty.com/wpcontent/uploads/2012/12/constructivism3.doc>
- Savery, J. R., & Duffy, T. M. (1996). Problem based learning: An instructional model and its constructivist framework. In B. G. Wilson (Ed.), *Constructivist learning environments: Case studies in instructional design* (pp. 135–148). Englewood Cliffs, NJ: Educational Technology Publication.
- Schell, G. P., & Jann, T. J. (2013).

Online course pedagogy and the constructivist learning model. *Journal of the Southern Association for Information Systems*, 1(1), doi:10.3998/jsais.11880084.0001.104.

Shultz, M., Ballard, K., & Hemerda, J. (2015, April). *Collaborative peer learning supports cognitive affordances of technologies*. Paper presented at the Global Learn Conference. Association for the Advancement of Computing in Education (AACE), Berlin, Germany. Retrieved from <https://conf.aace.org/recorder/play/5B48578ABE81557>

[D64D24B9DDF930FB/?embedded=1](https://www.elesapiens.com/blog/how-to-create-meaningful-learning-in-the-classroom/?platform=hootsuite?feed=rss)

Vandekar, K. (2015). How to create meaningful learning in the classroom. Retrieved from <https://www.elesapiens.com/blog/how-to-create-meaningful-learning-in-the-classroom/?platform=hootsuite?feed=rss>

Zitter, I., De Bruijn, E., Simons, P. R., & Cate, T. J. T. (2011, April). Adding a design perspective to study learning environments in higher professional education. *Higher Education*, 61(4), 371–386.

Dr. Michael S. Miller-First is a consulting professor specializing in curriculum and instruction, online teaching and learning, organizational behavior, and educational leadership. Michael has a Bachelor of Science in Education from Kent State University, Master of Science in Instructional Design and Development from Lehigh University, an Educational Specialist in Educational Leadership (K-12) from Nova Southeastern University, and a Doctor of Education in Educational Leadership (Higher Education) from Argosy University. His background includes elementary school teaching and administration, mentoring/training new teachers, curriculum development, online course design, and higher education administration. Currently, he is conducting research related to teacher preparation, critical thinking in higher education, online collaborative learning tools and processes, effective online teaching practices through student engagement, stimulating intellectual development, and building rapport.

Dr. Kristin L. Ballard is a Lead Faculty member, Program Lead for the Master of Arts in Human Services, and University Faculty Senate President at University of the Rockies. Dr. Ballard is also a contributing faculty member at several other universities. She holds a Bachelor of Arts degree in Psychology from The University of Maryland and a Ph.D. in Human Services from Capella University. Her background includes training, facilitating, non-profit event planning, fundraising, coordinating and volunteer management, and non-profits focusing on military families and the domestic violence field. Dr. Ballard's areas of research/academic interests include: human development, organizational leadership, human services

topics, behavioral sciences, military family studies, phenomenological research, effective online teaching practices, higher education administration, faculty engagement and satisfaction, effective faculty mentoring, self-care/avoiding burn-out, and unique and innovative course development tactics to enhance the student learning experience.