The Case for Active Learning Strategies in Constructivist Distance Learning Environments

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Abstract

Active learning strategies are used to support student learning via their interactions with others and with the content that is being learned. The body of research is replete with examples of how active learning strategies can be incorporated into traditional, brick and mortar classrooms. However, with the growth of online learning in higher education, strategies must be used to support learner success in such environments. Traditional active learning strategies can be modified for use in the online higher education classroom. Moreover, there are a plethora of online tools that can offer alternatives to enabling the use of such online active learning strategies. These online communication tools provide the means in which online constructivist learning environments can be realized. However, the online instructor and course designer must also understand what is active learning, what strategies exist, and how can such strategies be replicated within the context of an institutions online learning environment? Are there other tools not native to an instructions' online learning environment that can better support online active learning strategies? This paper will focus on how active learning strategies can be implemented in constructivist distance learning environments. The topic of what is distance learning will be discussed. The elements of constructivism and constructivist learning environments will be reviewed. Active learning in traditional, in-person classrooms and in online environments will also be reviewed. Finally, recommendations or future studies are suggested based on the body of literature reviewed.

Keywords: Active, Active Learning, Constructivism, Constructivist Learning Environments, CLE, Online, Online learning, Distance learning, Distance. Higher education, College, University.

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The role of distance learning in higher education (HE) is a crucial and yet complicated phenomenon. The research shows that online learning enrollments continue to increase despite high attrition rates (Weidlich & Bastiaens, 2018; Online Learning Consortium, 2018; Lee, Choi, Kim, 2013; Clay, Rowland & Packard, 2009). This idea is further supported by Ledderman (2018) who notes how online learning course enrollments are on the rise, while their traditional brick and mortar counterparts decline or remain flat. Freidman (2018) notes how from 2015 to 2016, online student enrollments were up by 5.6%. Ginder, Kelly-Reid, and Mann (2016) further support the notion of increased enrollments via recent federal education data that notes how an increasing number of HE students are enrolled in at least one online/distance program.

HE students benefit from online course enrollment by incurring lower costs and savings from not commuting, convenience and flexibility, and a variety of topics (OEDb, 2019). Online students can keep their full-time jobs and study in the evening or weekends. Moreover, HE students are able to take their courses when its convenient. In short, online learning is seen as a viable platform to today's learner.

Despite the benefits, students may experience difficulties in online learning. This is due in part to minimal to no interpersonal exchanges among students, and a lack of instructor expertise on teaching in online environments (Jaggers, 2013, p. 2). Students may also lack self-efficacy and self-regulation needed to manage themselves, their time and their coursework (Ormrod, 2019). Therefore, it is up to instructors and course designers to take into consideration the best way to support student learning and engagement, while also empowering students to succeed in online coursework. One such strategy is to look at the notion of utilizing active learning to support online student success.

This paper will briefly describe distance learning and how it can be supported by an active learning strategy. Active learning strategies are defined and how they are supported in the context of a constructivist view of learning. Finally, recent research on online active learning strategies have been applied in HE online courses are discussed.

Distance Learning and Constructivism

What happens when distance learning is viewed from a constructivist lens? Constructivism is one of many learning theories that has been used to support synchronous and asynchronous online learning. Constructivism may not always be associated with online learning, but the notion of knowledge construction and collaborative learning are present in many online course designs (Kosloski and Carver, 2017; Gold, 2001).

Driscoll (2005) stated that constructivism is a theory based on the work of Bruner, Vygotsky, and Piaget. Gros (2002) notes how constructivism is used as a "catch all" label for various approaches that fall under this umbrella. Despite the various perspectives, the premise of constructivism holds that knowledge is "constructed by learners to make sense of their experiences" (Driscoll, 2005, p. 387). Stansell and Tyler-Wood (2016) noted that in constructivism, the role of the teacher becomes that of an instructional guide and that learners construct their meaning based on their points of view and experiences.

Another variation of constructivism is Social Constructivism. The work of Lev Vygotsky posited how knowledge is individually constructed in a social context (Schrieber & Valle, 2013; Vygotsky, 1978). Vygotsky's work emphasizes the impact of culture and society and how their backgrounds and experiences shape their understanding via interactions with others (Jimenez, 2018; Schrieber & Valle, 2013; Vygotsky, 1978). In short, people learn from each other in a

variety of contexts; meaning making and construction of knowledge are not seen as passive means of learning.

Moreover, a key concept in the umbrella that is Constructivism, is the notion that learners play an active role in their learning. Ainsworth (2013) noted how constructivists view learners as active learners and that rather than being passive receivers of an objectively available external truth, and that knowledge construction happens "by building knowledge on top of previously acquired knowledge" (p. 151). Moreover, Goldman (2004), noted how knowledge is a continuous learning process that changes as new knowledge is negotiated and integrated into that is known. The core concept is that this continuous learning process is an active one. Therefore, when designing distance learning programs from a constructivist point of view, it requires active learning strategies that will support meaningful knowledge construction. Therefore learning environments that are undergirded by constructivist learning theories can offer an avenue to support active learning strategies.

Constructivist Learning Environments

One of the ways that constructivist learning can happen is via the use of environments that use constructivist approaches. Jonassen (1994) stated that constructivist learning environments focus on solving problems and that the key to meaningful learning is ownership of the problem or learning goal. Brown (2014) describes constructivist learning environments are ones where the teachers provide guidance and facilitation, and students take control of their own learning based on their own background and previous experiences. Constructivist Learning environments utilize social interactions and collaborative learning (Brown, 2014). Social interactions and collaboration are hallmarks of active learning strategies that can support student learning (Kosloki and Carver, 2017).

More importantly, constructivist learning environments can be implemented via the use of online communication platforms such as Blackboard Collaborate/Blackboard Collaborate Ultra™, Adobe Connect™, and Zoom™. However, having the platform and tools that enable such learning to occur is the first step. The instructor needs to also understand how to apply such online communication tools in the context of the pedagogical and contextual knowledge needed to lead such environments and enable learning to happen.

The instructor needs to understand what active learning strategies can be used in constructivist learning environments. Not all online communication tools are created equal and not all tools can offer the best tools for both instructors and their learners when it comes to supporting active learning strategies. Therefore, instructors and course designers must understand what active learning is and how it can be best incorporated via the online communication tools available.

Active Learning Strategies

According to Ueckert and Gess-Newsome (2008), active learning posits that learners must engage with content and with others to construct meaning and understanding; this involves using prior knowledge, making connections between ideas, and generating the construction of new ideas. Consequently, students learn more through active engagement in the learning process (Ueckert and Gess-Newsome, 2008). Gholami, Moghaddam, and Attaram (2014) discussed how active learning could be used to help students clarify their understanding of a topic. Tedesco-Schneck (2013) noted how active learning strategies could support critical thinking. Moreover, conceptual understanding is also increased when active learning strategies are used in classroom activities (Dori & Belcher, 2005).

Faust and Paulson (1998) highlighted numerous techniques that can be used to support active learning in the college classroom. Examples of active learning techniques include the 1-minute paper, the fish-bowl, flash-cards, think/pair/share activities, and concept mapping (Faust & Paulson, 1998). Many of these strategies are used in traditional brick and mortar classrooms. Fortunately, these strategies can be transformed to serve the online student regardless of the synchronous or asynchronous mode of instruction.

Online Active Learning Strategies

Kuo and Kuo (2015) published an article that highlights how traditional active learning strategies can be applied in online contexts. Paetzold and Melby (2008) further support this idea by noting how active learning strategies can work in online environments. Instructors must be prepared to utilize active learning strategies to support adult learners and enhance student interaction in online settings (Kuo and Kuo, 2015; Kuo, Walker, Schroder, & Belland, 2014; Paetzold & Melby, 2008; Phillips, 2005; Vincent & Ross, 2001). In addition to the online learning strategies used in traditional active learning environments, Donovan (2005) notes how active learning can also include includes assignments such as “debates, role assumptions, shared research, and joint presentations” (p.1). Donovan highlights online activities such as jigsaw, debates, online quizzes, blogs, wikis, joint research, paired discussions and reflections that can be used as part of an online active learning strategy.

Incorporating Active Learning in Online Environments

To incorporate active learning techniques into online learning, instructors must know the technology they choose for an online course (Kuo & Kuo, 2015). One should consider the tools and resources and the pedagogical strategies that can be supported by the technologies presented (Kuo & Kuo, 2015; Parker, Lenhart, & Moore, 2011; Phillips, 2005). Technology can then be

selected to support these topics so that the technology is a secondary consideration after the pedagogical strategies have been determined. In many cases there may be pre-selected platforms that may be used institutionally that will then play a role in supporting online strategies.

For example, Blackboard (a learning management system) has a variety of tools that can be used to support an online classroom. These tools include, discussion boards, quizzes, online chats and video conferencing (in the form of Blackboard Collaborate Ultra). Blogs, wikis, and journal features are also included in the latest version of Blackboard and can also support active learning strategies. Hsu (2008) describes these tools as communication tools where learners can share their thoughts with a public audience. This enables learners to engage in active discussions about the reflections posted.

Another example of active learning strategy that can be used online is Jigsaw. Weidman, and Bishop (2009) define Jigaw as a cooperative learning activity where small groups of students work on a piece of a problem and then come together to share their findings with the other groups. Researchers agree that jigsaw could also be used in synchronous and asynchronous online environments and support student engagement (Meyer, 2014; Amador and Mederer, 2013; Schaeffer and Cates, 1996). Online group breakouts can be used to support a jigsaw activity and students can share their findings via discussion board posts, wikis, or synchronous discussions.

Similar to Jigsaw, think/pair/share activities can also be used in both synchronous and asynchronous environments. Hacisalihoglu, Stephens, Johnson, and Edington (2018) define think/pair/share as a collaborative activity where groups or individuals think about a problem, , pair with another individual or group, engage in discussion, and share their findings with others. (via group chats/collaboration tools in Blackboard). The University of Wisconsin Milwaukee (2019) provides sample instructions in their Virtual Teaching Commons on how think/pair/share

can be used in asynchronous classrooms; specifically recommending that small groups of pairs be used when considering this strategy. In contrast, Riggs and Linder (2016) discuss how think/pair/share can be conducted in both asynchronous and synchronous online environments. The authors further note that discussion boards can be used to facilitate asynchronous think/pair/share activities as more convenient method versus live online chats (Riggs & Linder, 2016).

When reviewing Donovan's notion of paired discussions and reflections, these activities can be supported by the blackboard collaborate Ultra function for paired activities. Wikis, blogs, and even the discussion board could be used to support student reflection activities. Asynchronous debates can be fueled by using the inherent blackboard discussion boards. Synchronous debates could be supported via live chats or via the Blackboard Collaborate Ultra environment. The inherent whiteboards in Blackboard Collaborate Ultra can serve as another means of supporting active engagement with students in vocabulary exercises, diagraming, and even in basic quantitative problem-solving activities. Again, many of these features can be found in other LMSs including Canvas, Litmos, Moodle and Schoology.

However, instructors are not limited to just using one platform. Instructors can bring in other tools into the course to support active learning strategies. An example of activities that could be supported outside of the Blackboard environment can include concept mapping (Mindmup.com and Mindmeister) flash-cards (Quizlet.com); and online quizzes (Kahoot.com). Other video tools such as YouTube Live and Zoom could be used to engage students in synchronous online activities. In short, there are various tools that can be used to replicate or transform known active learning strategies in online environments.

Known issues and Future Research Recommendations

Based on the literature, the majority of research found on active learning focuses on the traditional black and mortar educational institutions and limited research exists in online learning and active learning (Kuo and Kuo, 2015). Additional research is needed on understanding online active learning strategy effectives in online environments. Research should explore both synchronous, asynchronous and blended classrooms to fully understand the online active learning strategies that can best support student learning.

In terms of creating an online constructivist learning environment that can support active learning strategies, interaction and collaboration may be seen as harder to implement and manage than in traditional brick and mortar classrooms (Kosloki and Carver, 2017). The research noted by Kuo and Kuo (2015) and Donovan (2005) highlight strategies that can be used to support interaction and collaboration via various methods (i.e., Jigsaw, debates, and paired discussions). Interactive and collaborative tools should be further explored for their use and effectiveness is supporting student learning. Moreover, practical strategies should be studied on how to best implement such tools for interactivity and collaboration.

Finally, it takes time to implements active learning strategies into the classroom (traditional or otherwise) (Faust and Paulson, 1998). Tools and strategies need to be tested so that the instructor can gain confidence and comfort in using the tools. Instructors do not want to destroy their credibility without proper understanding and comfort of using a tool or strategy. Therefore, many instructors may delay or avoid implementing active learning tools and strategies. Research, specifically in the form of case studies, should be conducted to offer replicable and best in class strategies for implementing active learning.

Conclusion

Ultimately, active learning offers strategies that can be implemented in both in-person and online courses. Although the research on online active learning is still in emerging, recent studies do show the promise of what active learning strategies can support in distance learning environments. In an era where student-centered strategies are being considered, active learning offers the means to support such approaches to learning and student success. Moreover, as online higher education enrollments continue, the need to find ways to continue supporting student success and student engagement must become a priority to support current and future online learners.

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