The Shift from Instructivist, Teacher-Centered Learning to Constructivist, Student-Centered Learning in Online Environments

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I. Purpose of Paper/Problem to Address

According to Schifter (1996), although most teachers seek ways to improve their practice and have even expressed enthusiasm for the constructivist approach to education, their underlying beliefs, whether conscious or not, about teaching and learning tend to counter efforts to establish constructivist learning environments (as cited in Dimock & Boethel, 1999). Although the constructivist concept dates all the way back to Socrates (469-399 B.C.) with his Socratic model of questioning, which has the stimulation of critical thinking through a process of debate and discovery as its premise, many twenty-first century educators are still following expository, or lecture-based, approaches to instruction that lack the advocacy of the construction of understanding through a collaborative, interactive process. Over the past several decades, college and university campuses have experienced a technological revolution as the information and digital age has significantly changed the types of tools that educators use to present instruction and to connect with learners. According to a study conducted by Bonk & Graham (2006), ninety-three percent of higher education teachers report using an online learning environment to some extent to enhance their residential courses. The rapid growth in computer technologies has assisted researchers in creating different kinds of technology-mediated learning environments that implement strategies that follow a constructivist pedagogy, such as providing collaboration and the opportunity to engage multiple perspectives on what is being learned and engaging learners in activities authentic to the discipline in which they are learning (Driscoll, 2007). However, with the Internet becoming a platform for formal education to take place, there have been many faculty challenges in adjusting teaching methods to suit the needs of the new learning environment.
The purpose of this paper is to discuss constructivism and why its adoption is of the utmost importance as education makes a significant transition into the online world. The necessity of the rise in usage of the constructivist model will be argued to have been positively correlated to the rise in online education, and the continued need for more educators to make the shift from teacher-centered learning to student-centered learning will be addressed. The focus will mostly center around theoretical approaches to adult education in online courses at higher education institutions. The author will attempt to suggest conceptual insights into virtual learning environments.

II. Defining Constructivism and Instructivism

Nikitina (2010) states, “Educational constructivism has long been associated with advanced pedagogy on the basis that it champions a learner-centered approach to teaching, advocates learning in meaningful contexts, and promotes problem-based activities where learners construct their knowledge through interaction with their peers” (p. 92). Dewey considered the teacher to be a guide or facilitator as opposed to a director since learning allowed for creative interaction with the teacher rather than outcome-based teaching (Huang, 2002). The main principle of the constructivist learning theory is that learners construct knowledge via a process of discovery. Constructivism places emphasis on knowledge being context bound, and it stresses that individuals make meaning out of their learning experiences (Knowles, Holton, & Swanson, 2005). The idea is that people learn best when they actively construct their own understanding. Students are not passive recipients of knowledge. Rather, they are active in the learning process as they contribute by sharing their ideas, viewpoints, and experiences. Constructivism emphasizes learning as opposed to teaching and encourages and accepts learner autonomy and initiative. Constructivists view learning as a process and encourage learner inquiry. In addition, they acknowledge a critical role of experience in learning. The general idea of the learning
theory is to nurture the learner’s natural curiosity. Instead of emphasizing knowledge reproduction or memorization, constructivist learning environments advocate knowledge construction. Despite the fact that John Dewey (1916), Jean Piaget (1973), and Lev Vygotsky (1978) each suggested that people learn actively and construct new knowledge based on prior knowledge through student collaboration, educators have largely followed the instructivist, teacher-centered approach throughout the twentieth century (Schifter, 1996).

Constructivism is the opposite of instructivism, a theory which maintains that knowledge is transmitted into one’s mind directly from the teacher and is not meant to be analyzed or questioned by the learner (Diaz & Bontenbal, 2000). Teachers are the primary agents of learning and students are passive absorbers of information. In other words, the teacher has all of the knowledge and *dumps* it on the students to memorize. Between 70% and 90% of professors still use traditional lecture as their instructional strategy of choice (Diaz & Bontenbal, 2000). Instructivism, which is sometimes referred to as direct instruction, follows a behavioral learning approach because it is based on conditioned learning which emphasizes drill and practice, memorization, and making associations. Behaviorists, such as B.F. Skinner, theorize that behavior is only strengthened or weakened by consequences of punishments or rewards. Behaviors are learned to be repeated through positive reinforcement or rewards. Conditioned learning means that there is little room for self-discovery. On the contrary, constructivists would argue that self-discovery is essential for authentic learning to take place.

Savery and Duffy (1996) suggest eight constructivist instructional principles (as cited in Knowles, Holton, & Swanson, 2005):
1) Anchor all learning activities to a larger task or problem. 2) Support the learner in developing ownership for the overall problem or task. 3) Design an authentic task. 4) Design the task and the learning environment to reflect the complexity of the environment in which learners should be able to function at the end of learning. 5) Give the learner ownership of the process used to develop a situation. 6) Design the learning environment to support and challenge the learner’s thinking. 7) Encourage testing ideas against alternative views and alternative contexts. 8) Provide opportunity for and support reflection on both the content learned and the learning process (pp. 192-193).

III. Types of Constructivism

There are three main types of constructivism: social, cognitive, and radical. Developmental psychologist Jean Piaget is the major influence behind cognitive constructivism. According to Piaget (1953), humans cannot be given information which they immediately understand and use; instead, humans must construct their own knowledge (as cited in Powell & Kalina, 2009). In cognitive constructivism, ideas are constructed in individuals through a personal process (Powell & Kalina, 2009). Piaget’s theory includes the processes of assimilation and accommodation into one’s schema. A schema is an organized pattern of thought or an internal representation about the world. Assimilation refers to adding new knowledge to one’s existing schema, and accommodation refers to changing existing schemas or creating brand new schemas in order to accommodate for new information. The idea is that our thought processes are constantly changing as we construct new understandings about the world. Cognitive constructivist thinking maintains that there is an absolute, discernable, external truth or reality which exists outside of the individual. The goal is to gain glimpses of that reality as more and more information is
gained through an active and reflective learning process. According to cognitive constructivism, learners experience new phenomena, interpret experiences in terms of what they already know, reason about new experiences, reflect on the experiences, and reflect on the reasoning process itself (Gholson & Craig, 2006). The learner selects and interprets information and his or her schema allows him or her to make sense of the information through a cognitive structure or schema. Whereas cognitive constructivism focuses on the individual learner, social constructivism focuses on learning through social interaction.

Lev Vygotsky is known as the father of social constructivism. He theorized that meaning is derived through active collaboration in social contexts. This can happen online with computer-supported collaborative learning. In this theory, learning is a shared experience as opposed to it being an individual experience as with Piagetian thought. Learners form and evaluate their constructs through dialoging with other individuals and with the larger society. Emphasis is placed on culture shaping cognitive development. Social constructivist thinking maintains that reality exists but cannot be established without social constructs.

The third type of constructivism, radical constructivism, does not believe that an external reality exists outside of an individual or a community (Mohrhoff, 2008). This theory encourages students to think about the world with the understanding that they can never reach an objective reality. All of their knowledge is made up of subjective constructs in the individual mind. An objective reality may exist, but this theory approaches learning with the idea that objective truths cannot be known. This is known as the most extreme form of the constructivist learning theory.
IV. Using the Constructivist Approach in Online Learning Environments

Huang (2002) notes, “Many commentators have argued that distance education requires a qualitatively new pedagogy built on a unique relationship between the instructor and the learners. Traditional education or one-way televised learning at a distance often produces boredom” (p. 27). He goes on to suggest that constructivism should be applied to distance education but that instructional designers in online and distance education face the challenge of reflecting a philosophical and methodological shift from behavioral to cognitive approaches and then from objectivist or instructivist to constructivist approaches.

The increasing popularity of online coursework has caused a greater need for constructivist principles to be adopted by educators. The Internet provides information. This makes it easy for an online course to become just that—a place where information is housed. Assigned reading should be supplemented with interactive tools, such as discussion boards, wikis, student polls, etc. Most learning management systems, such as Blackboard, Moodle, and Angel, were built with collaboration in mind and contain these tools. Online learning provides an excellent platform for constructivist principles to have practical application.

Constructivist principles provide ideas to help instructors create learner-centered and collaborative environments that support critical reflection and experiential processes (Jonassen et al, 1995). Constructivist teachers will use the Socratic model of questioning in discussion boards. Instead of providing students with an answer right away, teachers ask probing questions to stimulate critical thought. In Xenophon’s book Oeconomicus, Socrates was quoted as saying, “Can it be that asking questions is teaching? I am just beginning to see what is behind all the questions. I am led on by means of things, pointed to things that resemble them, and persuaded that I know things that I thought I had no knowledge of.” Socratic questioning helps students...
discover the structure of their own thoughts and arrive at a judgment through their own reasoning and through a self-discovery process. The goal of the Socratic Model is for students to internalize a mode of questioning that will enable them to achieve a higher level of understanding. Socratic questions can come from the teacher/facilitator or the student. Because the effective integration of constructivist theory is dependent on the instructor’s role evolving from the sage on the stage to the guide on the side, online instructors should be willing to give students some control of the discussion forums (Gueldenzoph, 2004). The idea is that students can contribute to the learning process. Questions should probe viewpoints and perspectives, and there will often be a need to ask questions for clarification. Examples of questions that may be asked in discussion boards are, “Can/did anyone see this in another way?” or “Could you please explain your reasons for holding that viewpoint?” Students should also be asked to provide examples from their own experience in order to make real-life applications to the topic at hand. Recounting such experiences will allow the learner to analyze the prior knowledge and perceptions that he or she has so that those perceptions can be modified as new information is learned. Constructivist learning environments encourage thoughtful reflection on experience and use real-world settings or case studies in order to take concepts and draw practical application from them. Discussion boards are typically thought to be the heart and soul of online learning, but if they are not inquiry-based then they will not serve as a tool where students will have the opportunity to achieve deeper learning and understanding. The goal of the discussion forums may or may not be to arrive at a certain end, depending on the type of constructivism that the teacher or institution practices and encourages. Regardless of the type of constructivism that is used, however, the goal is to aid the student in the construction of understanding of knowledge which will often require modification of one’s existing schema. The idea is to build on prior
knowledge and then make adjustments to that knowledge or understanding through new understandings that are gained.

With the development of YouTube and other video sites, we now live in a world that is largely visual. Teachers can supplement reading with videos in order to tap into the visual learners that are now prevalent. Teachers can then ask follow up questions about the videos via the discussion boards in order to encourage the expression of reactions and to encourage collaboration of ideas.

Wikis are another collaborative tool that may be used in virtual learning environments. A wiki is a webpage that can be modified by all classmates. They are commonly used for group work purposes as students are given the opportunity to work on a project simultaneously through the web. Pletka (2007) notes, “Wiki technologies promote the contribution of ideas manifesting through collaborative efforts that enable outcomes and real products that are judged on their own merits within the community” (p.32). Students usually use wikis inside of the learning management system, but those who go outside of the learning management may end up making contributions to the web through the creation of wikis. Google docs also provides collaboration tools where students can work on the same spreadsheet, presentation, or chart at the same time that they will then have the option of sharing with the public. These activities are vital to creating a constructivist environment for online learners.

V. Faculty Resistance

Teachers in the United States tend to think in terms of a fixed body of knowledge that can be transmitted to students, but the rapidly increasing amount of information accessible to learners makes it difficult for teachers to be the only deliverers of information (Dimock & Boethel, 1999). In general, teachers view themselves as the ultimate knowledge bearers and they struggle with
giving up control. Many are used to being lecturers with a teacher-centered approach to instruction and are not comfortable making the proper philosophical adjustments that online learning environments demand. Many teachers have a lack of faith in their students and do not believe that they can benefit class discussion. Perhaps they are so used to following instructivist strategies that they are unaware of what making the shift to constructivist pedagogy entails.

It would behoove institutions to provide training to faculty members on implementing constructivist strategies into their online classrooms. If teachers are not on site, they can be trained through Adobe Connect, Skype, or another similar program. The lack of training contributes to the resistance that is seen among many teachers. Some teachers who did not grow up digital are afraid of modern day technology. They may feel incompetent about using certain computer-based technology to enhance self-discovery and collaboration in their classrooms. Once teachers are on board with the pedagogical shift, they need to be trained on how computer-based technology can help them with practical application of the pedagogy. Training and performance support tools can help counter their fears of using new technology (Bonk, 2010).

VI. Conclusion

Constructivism is not new; Socrates, Piaget, and Vygotsky proposed ideas about how knowledge and understanding is constructed many years ago. However, the learning theory has not fully caught on as instructivist, behavioral models have dominated education. Online and distance education is becoming increasingly more popular due to its convenience for adult learners. Instructional designers in distance education face the challenge of changing their philosophy of course design. They can design courses in certain ways that promote collaboration, but it is then up to the teacher to facilitate the course in such a way that it is more than an information dump but rather an environment that prompts deep learning. If educators do
not keep up with the philosophical shift that online courses demand, students will suffer because they will not be provided with environments that will guide them toward authentic learning. Teachers need to be trained on how to embrace a student-centered approach to learning. In addition, they need to be trained on how to keep up with twenty-first century learners who crave interactive, collaborative technologies that will guide them in the construction of the understanding of knowledge. Constructivists argue that this is how genuine learning will take place in the virtual environment.

**VII. Areas for Future Research**

While educators are still making the shift to the constructivist teaching model, additional distance education pedagogy is emerging. According to Anderson and Dron (2011), a new learning theory called connectivism is developing as the result of widespread access to networked technologies. It would be beneficial to research the new theory and determine its relevance to online and distance education. Anderson and Dron note:

Connectivist learning focuses on building and maintaining networked connections that are current and flexible enough to be applied to existing and emergent problems. Connectivism also assumes that information is plentiful and that the learner’s role is not to memorize or even understand everything, but to have the capacity to find and apply knowledge when and where it is needed (p.87).

Along with studying the new learning theory that is emerging, it is important to conduct research on effective types of training for faculty as they learn to accept and adopt new ways of teaching and learning. While research may suggest that faculty training is necessary (Bonk, 2010), very little research describes which type of training produces the best outcomes.
References


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