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DESIGNING SOCIALLY-MEDIATED REFLECTION IN ONLINE DISCUSSIONS

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DESIGNING SOCIALLY-MEDIATED REFLECTION IN ONLINE DISCUSSIONS

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Abstract

Reflection helps students understand the value of their learning experience. Reflection can be an individual activity, for example through journals, one-on-one discussions, and papers and it also can be socially-mediated, where students reflect together in social spaces either face-to-face or in online learning environments. The purpose of this paper is to discuss the value of reflection and the literature that supports it and share how socially-mediated reflection was designed and assessed in a Web-enhanced experiential learning course on water and sustainability. First, a review of the literature related to instructional design and learning theories that support reflection, reflection as a metacognitive activity, and models to guide reflective practice is presented. Second, the context of the course is described. Third, a description of the students' reflection assignment and how it was implemented and assessed is provided. Readers should gain an understanding of the research that supports this practice, identify practical tips for embedding socially-mediated reflection in their own virtual learning spaces, and define opportunities for future research.

Introduction

Grounded in the early works of Dewey, Lewin, and Piaget, experiential learning has become increasingly popular in higher education. Experiential learning serves as a foundation for lifelong learning and the development of the whole self as a citizen, family member and human being (Kolb, 2015). An essential element to experiential learning is reflection. Caffarella and Barnett (1994) defined reflective practice as "the process of bringing past events to a conscious level and of determining appropriate ways to think, feel, and behave in the future" (p. 38).

The purpose of this paper is to share how socially-mediated reflection was used in a Web-enhanced experiential learning course on water and sustainability and discuss strategies for designing socially-mediated reflection activities in virtual environments. First, a review of the literature related to instructional design and learning theories that support reflection, reflection as a metacognitive activity, and models to guide reflective practice are discussed. Second, the context of the course is described followed by details about the learners' reflection assignment, including how it was implemented and assessed. Finally, suggestions for practitioners and researchers who are interested in creating online learning environments that support reflective practice are provided.

Review of the Literature

Theories and Models Supporting Reflection

Over the years, reflection has been described in several instructional design and learning theories. For example, Jonassen's theory for designing constructivist learning environments (CLEs) (Reigeluth, 1999) sets the problem at the center of the learning. As such, CLEs are intentionally designed to promote personal meaning making. Reflection is central to being able to connect new ideas to prior learning and future application. To support this type of problem-based learning requires modeling, coaching, and scaffolding. Jonassen described how these three supports incorporate opportunities to apply Schön's (1982) reflection-in-action and reflection-on-action. Other instructional-design models that prescribe reflective methods include Lewis, Watson, and Schaps' theory for social, ethical, and intellectual development; Nelson's theory for collaborative problem solving; and Bielaczyc and Collins' theory of learning communities in classroom (Reigeluth, 1999).

There are also curriculum models and learning theories that describe reflection as a critical component. For example, Borton (1970) proposed a curriculum model, *Reach, Touch, Teach*, based on the theory of human information processing (HIP) and grounded in experience. This model included three phases: sensing (i.e., having an experience), transforming (i.e., making sense of the experience), and acting (i.e., applying what was learned to new situations). Borton operationalized these three phases by ascribing three simple questions: *What? So what?* and *Now what?.* Although this model was originally designed to guide a curriculum that would help students gain knowledge and learn how to learn (i.e., develop metacognitive skills), Rolfe (2014) suggested that Borton's model could also be used to facilitate reflective practice. Kolb's (1984) experiential learning theory describes four phases (concrete experience, reflective observation, abstract conceptualization, and active experimentation) through which learners cycle through as they engage in experiences, reflect on them, create meaning, and apply what they learned to new situations. Kolb's four phases align with Borton's (1970) phases of sensing, transforming, and acting and the three questions, *What, So what?, Now what?*

Socially-mediated Reflection

With advancements in information and communication technology (ICT) and the growth of online and blended learning, new guidelines and instructional design theories that incorporate socially-mediated reflection as a design guideline emerged. Socially-mediated reflection in online learning environments is the process of engaging in reflection as a social activity, where the community can influence the dialogue. Learners not only reflect on their experience but also how the reflections of others connect, relate, and influence their individual understanding. Reflection in online discussion forums can be individually and socially-mediated (Biasutti & Frate, 2018; Layen & Hattingh, 2018; Lin, Hmelo, Kinzer & Secules, 1999).

Palloff and Pratt (2003) acknowledged the value of reflection in both face-to-face and online collaborative activities noting these activities promote "development of critical

thinking skills, co-creation of knowledge and meaning, reflection, and transformative learning" (p. 35-37). Snyder's (2009) instructional-design theory for the creation of online learning communities for adults, provided recommendations on how to build socially-mediated reflection into the instructional design of an online course through online reflection assignments such as a blog that can be shared, read, and commented on by the peers and the instructor.

Reflection and Metacognition

Reflection is a metacognitive activity. In reference to the development of metacognitive thinking, Lin et al. (1999) noted that one of the biggest challenges for educational technologists is to "go beyond simply providing students with technology tools to search efficiently for information. We must also provide scaffolds that enhance critical thinking and reflection about that information" (p. 3). Akyol and Garrison (2011) defined metacognition in an online learning community as "a set of higher knowledge and skills to monitor and regulate manifest cognitive processes of self and others" (p. 184). Snyder and Dringus (2014) described metacognition within the social context of online discussions as individually and co-constructed. They employed student-led discussions as an instructional strategy to foster metacognitive strategies and found positive results; however, they recommended that guidance be provided to students about what metacognitive skills are and how they can use them effectively in online activities, such as an online discussion. Therefore, in an online environment, reflection activities not only facilitate metacognition skills, they do so through activities that promote self- and co-regulation.

Collaborative Reflection in Online Discussions

Context

The context for the design of socially-mediated reflection is an honors course in water and sustainability offered in Fall 2018 at a private, nonprofit university in the Southeast. The focus of this experiential learning course was to introduce students to basic principles of water and explore ways to ensure availability and sustainable management of water and sanitation for all.

This paper's author served as the instructional designer and co-instructor for the course. Co-instructors were responsible for managing the course assignments, grading, arranging guest speakers, coordinating field trips, etc. The class included 20 students who met weekly from 6:00 p.m.–8:30 p.m., in an on-campus, Web-enhanced delivery format. Each week focused on a different topic related to water and sustainability. University professors, community leaders, and national experts facilitated discussion during these on campus meetings. All but one session was facilitated face-to-face and one session was facilitated via Polycom, a web-conferencing service. Topics included water fundamentals, federal and state water use, management and water quality laws and programs, water politics, water conflict and international development, water stewardship, water accounting and economic value, water and the arts, and innovative solutions to water problems (e.g., education, desalination, and drip irrigation).

Using guidelines and materials from Aim2Flourish (www.aim2flourish.com), the course was designed to connect students with local government and business leaders. Students used appreciative inquiry techniques (Cooperrider & Whitney, 2005) to gather information and write stories about their leaders that highlight how their work aligns with the UN Global Goal #6: Clean Water and Sanitation (https://www.globalgoals.org/). The course consisted of group and individual assignments along with opportunities for individual and group reflection throughout the semester. For the two group assignments, groups of three to four students were paired with a local community leader. The instructors identified local leaders who they thought were contributing to achieving Global Goal #6. These leaders included the county's water resources manager, the sustainability manager from the city's public works department, a project manager for a consulting firm, the director of global corporate social responsibility for a large corporation, and a community outreach educator from a waste management company.

Students also participated in two field trips during the semester. The first trip was to the city's government center where they participated in a water and technical advisory board joint committee meeting. The second field trip entailed visiting a stormwater treatment area, the largest constructed wetland in the world engineered to maximize the removal and storage of contaminants, followed by a guided airboat tour of the Everglades, a natural ecosystem (Paul Baldauf, personal communication, April 2018).

Class activities, readings, and pre- and post-assignments were designed to scaffold student learning about the weekly topics. Throughout the course, students were asked to reflect on their learning in both face-to-face and in online discussions, both individually and collaboratively.

Online Socially-mediated Reflection Activity

Using Borton's (1970) questions, *What? So what? Now What?* and Kolb's (1984) four phases as a framework, students were instructed to pick one or two questions from each of the three question categories and respond in the online discussion forum in Canvas, the university's learning management system (LMS). This reflection assignment focused on their experience of conducting their appreciative inquiry interview with their assigned community leader.

What? (Concrete Experience)

- What were you (and your team) trying to accomplish? Why? Where are you in the process?
- What specific elements of the course materials relate to the interview and ultimately your leader's story?
- How were you able to apply a skill, perspective, or concept related to the material presented/discussed in class?
- What did you observe about your behavior and actions? Those of others?

So what? (Reflective Observation & Abstract Conceptualization)

- Why does what you've learned about conducting an appreciative inquiry interview matter, why is it important?
- What value is there in interviewing local leaders and sharing their stories?
- What assumptions are you making about this situation, the people involved, and about yourself?
- How does this experience touch upon your own values?

Now what? (Active Experimentation)

- Based on what you've learned about appreciative inquiry and the interview process thus far, what, if anything, will you do differently going forward? Why will you do it that way?

Darcy's Reflection

To illustrate how students used the discussion posts of others to help them formulate their own ideas and reflections, following are excerpts from one student's response. Pseudonyms are used to protect identity. After each excerpt, a brief explanation of how the student (Darcy) engaged in reflection as a social activity and how the interplay between individual and socially-mediated reflection helped her to formulate the meaning of the experience. Darcy wrote, *"In answering the "what," some people wrote their goal was completing the project efficiently, and others went into what they wanted to learn through the project. I thought it was interesting how people approached the question differently. I probably would have interpreted the question simply as looking for the goal of completing the project without thinking to talk about the learning goals."*

Darcy points out how other students in her class interpreted the reflection prompts. This shows that Darcy not only read her classmates' responses but also thought about them within the context of her own learning. Darcy also noted, *"Jorge, Julie, and a few other students had talked about how the content in class gave them a background to understand the concepts the interviewees talked about. Mr. Bowles, who my group interviewed, would use very technical language at times. While it was still a little difficult for me to keep up, I would have been absolutely totally lost without the background from the class."*

Darcy explains how what she learned in class helped her to understand her local leader. In addition, she notes that other students in the class also mentioned how the foundational knowledge presented in the course helped them. Darcy answered the question about why the experience was important to her by stating, *"There are various factors that go into water use and it can be difficult to get a grasp on it, but it is very rewarding to understand."*

She related her experience to that of her classmate by stating, *"Similar to what Jorge had said about growing up in this city, I live further north in the state and Mr. Bowles actually talked about several projects in my area. So to see these lakes and rivers day to day and to hear what goes into taking care of them, it gives me an appreciation for something I took for granted before."*

Darcy compared her thoughts with her classmate, Mariana stating, *"Especially learning from Mr. Bowles, who is a water advisor for both government and private entities, I agree with what Mariana said about looking at the agricultural and industrial aspect of everything. There are various factors that go into water use."*

Again, Darcy reflects on how she might apply what she learned and compares her key learnings with her classmate, Julie. *"Julie mentioned using the inquiry skills from this class in her life, and I was just thinking about this in class the other day. I appreciate and enjoy what we have learned about water in class and from all the different points of view, but I feel that learning appreciative inquiry through this class is what will have the most impact on my career path."*

Assessment of Socially-mediated Reflection

Rubrics for assessing reflection can be used to guide the instructor's evaluation. They can be as simple as determining to what degree the students were able to name the experience, describe what they learned, and how they plan to apply their learnings to future experiences and as complex as having levels of mastery with clear descriptions of what constitutes achievement. Barton's (1970) Reach, Touch, Teach Model, Kolb's Experiential Learning Theory (1984), Kiser's (1998) Integrative Processing Model, Rodgers (2002) Reflective Cycle, Moon's (2004), Five Stages of Learning, and Ash, Clayton, and Moses' (2009) DEAL Model can be used not only to design reflective learning assignments but also to assess them. In our case, we looked for evidence of how the learner described the experience, made sense of it, and thought of ways he or she could apply what was learned.

In addition, given this assignment was intended to be done in the online forum where students could read and reflect on their peer's posts, we were also looking for examples of how their peers' comments influenced their reflection about the experience. In socially-mediated reflection, the instructor's role is to monitor and guide students' reflection and use questions or prompts to scaffold their learning (Li, et al., 1999). We provided feedback individually and in private via email noting areas of strength and providing additional questions prompts to guide them through the reflective process.

Implications and Suggestions for Future Research

Lin et al. (1999) suggested, "individual and socially-mediated reflection are complementary and both are important for helping students learn to reflect" (p. 44). It is important to consider the intentional design of online learning environments that leverage technologies that facilitate both individual and socially-mediated metacognitive and reflective practices. Practitioners might consider implementing various types of reflection activities using one of the models discussed herein. Researchers might investigate how individual and socially-mediated reflection can be used to strengthen metacognitive skills within blended and online courses (Snyder & Dringus, 2012) and how to best support reflection as part of self-regulated learning (Cui, Wise, & Allen, in press). As we consider these opportunities for future research, we must not forget what we have learned through existing learning theories and instructional design theories. We should also encourage application of these

theories using new and emerging technologies. Formative research methods as described by Reigeluth and Frick (Reigeluth, 1999) could support this type of experimentation.

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