

Using A Virtual Design Studio to Support Collaborative Studio Instruction

Jessica Briskin, Bloomsburg University, jbriskin@bloomu.edu
Susan Land, Penn State University, sland@psu.edu

Abstract: This study explored artifact-driven online collaboration methods within a virtual art studio context. A collective case study (Stake, 1995) methodology was used to investigate a virtual design studio (VDS). The purpose of this study was to explore how two different studio art classes used a VDS environment to engage in studio practices and online critique processes. Through data analytics and thematic analysis, this study investigated how students collaborate during the critique process in a VDS environment. The results are supported in three ways: (1) VDS technology afforded viewing and the critique of artifacts, (2) the VDS failed to support dynamic peer collaboration, and (3) students sought technology alternatives to engage in deeper discussion. These findings aim to increase the effectiveness of VDS and expand the methods of online student collaboration.

Keywords: virtual design studios, online collaboration, online discourse

Introduction

A virtual design studio (VDS) is one platform in which students can post artifacts (artwork), critique/collaborate, facilitate sharing of design information, and support integration regardless of place and time (Broadfoot & Bennett, 2003). A critique is a strategy used to evaluate students' work and work in progress to discover potential ways to proceed (Hetland et al., 2013). A critique is a creative and collaborative process that is linked to the principles of effective learning and has been identified in the learning sciences (Sawyer, 2012).

Studio-based learning (SBL) is a method used in arts-based education that allows learners to use feedback from peers to refine their work and it is through that interaction that students can foster a sense of creative discovery, exploration of ideas, and critical discussions (Vyas et al., 2012). Students are encouraged to not only produce artifacts but also to critically respond to others' artwork (Halverson & Sheridan, 2014). A group of students can achieve more together than they could individually (Barrett, 2000). A typical interaction involves both the instructor and students providing feedback to a piece of artwork, as well as the artist responding. This is a continual dialogue between an instructor and peers. Due to evolving technology, studios that leverage a virtual design environment are a relatively new phenomenon; therefore, it is important to investigate the affordances and constraints of this new offering and to examine how the proliferation of the online environment impacts the student learning experience in the arts discipline. As classroom learning environments inevitably transition to more online environments, unanswered questions of practical and theoretical significance are worth discussion: How can a critique effectively translate into an online environment? What will be lost or gained in this process?

The creative process and collaborative critique are linked to the principles of effective learning and have been identified in the learning sciences (Sawyer, 2012). Given the research on SBL, this study explored how two case studies used a VDS for studio practices, specifically the collaborative nature of participating in a critique. By embedding a collaborative activity, like a critique, into the structure of a course, encourages students to view it as a necessary step in the process of creating quality work (Ruff, 2010). This research investigated how technology impacts the collaborative critique process in a virtual studio environment. Specifically, this study aimed to investigate: How does technology provide opportunities or barriers to student collaboration in a virtual environment?

Methods

This study builds off of a pilot study that was conducted in the spring of 2016. The goal of the pilot study was to explore strategies to leverage this technology in an effort to support critiques and collaboration practices. The pilot study was integral in the design of the VDS and helped to determine what "worked" and what did not in the VDS.

This study ran in fall 2017 and employed a qualitative collective case study (or multiple case study) design (Creswell, 2013; Yin, 2003) to describe and explain how learners in two asynchronous studio-based classes utilized a VDS. This collective case-study (Stake, 1995) builds off the pilot and focused on two different courses from a Digital Multimedia Design (DMD) program at a university in higher education to explore the pedagogical beliefs and implications for SBL in two asynchronous learning environments.

The participants and case study setting

Participants included 17 undergraduate students (ages 18-44). This first case examined a course which introduces students to the concepts, skills, language, and principles of practice in art and design, communication, and information sciences. Ten students consented to be a part of the study. The second case study analyzed a course that provides an introduction to how computer hardware and software can be used to produce works of art and design to be exhibited electronically or in print. Seven students consented to be a part of the study. The analyses focused on two assignments for each case study that included studio-based instruction and a critique of artwork. Students were taught a critique method to provide feedback called the critique sandwich, in which students provided a compliment, followed it up with a possibly negatively comment, and ended the critique with a positive statement. Furthermore, these assignments required students to go through a process of 'propose–critique–iterate,' where students provided feedback to help refine an artifact (Brocato, 2009, p. 179) for final submission. This practice is similar to the characteristics of the four studio hallmarks: demonstration-lecture, students-at-work, critique, and exhibition (Hetland, 2013).

Learning design and environment

The learning environment from this study focused on the participation and experiences of conducting a critique in the VDS. This VDS is a component of a larger online platform called eLearning Management System (ELMS). The ELMS platform was developed using Drupal, an open source educational technology platform used for building and sustaining innovative online courses. In ELMS there are two virtual environments: (1) course pages and (2) the VDS. Courses pages, which were separate from the VDS, displayed specific information about assignments and course content. This study concentrated on the VDS. Students were taught how to use the system and were required to use it for all class assignments and to critique peers (see Figure 1).

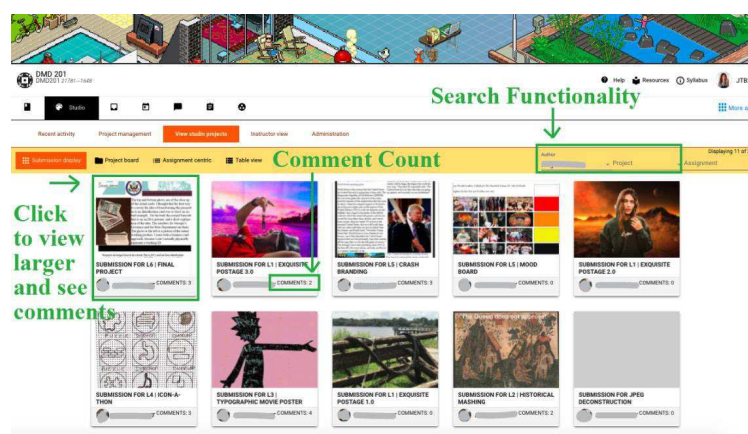


Figure 1. The VDS Homepage that Shows a Gallery of Student Artwork.

Data sources and analysis

Data sources included: (a) data/user analytics, (b) transcripts of discourse and student artifacts (artwork) posted on ELMS, (c) online interviews, and (d) background information surveys. Interviews were transcribed and interactions on the virtual studio were documented and interpreted. There were two types of data analysis: (1) data analytics to examine critique completion and response rates and (2) thematic analysis of participant interviews. Both of these methods were collected to discover trends in participation and engagement in the VDS.

Findings

Technology is what mediates the collaborative environment between students since there are no synchronous communication components. The findings are categorized in three ways: technology affordances (what the VDS allows students to accomplish from the participants' perspective), technology failures (concern with the technology and issues using/navigating the VDS), and technology alternatives (other critique methods).

The VDS technology afforded viewing and critiquing artifacts

The functionality of ELMS allowed participants to complete critiques and provided an environment that enabled dialogue, conversations, and critique of peers' works. As one participant discussed, the asynchronous aspect of the VDS was beneficial because of the flexibility: *"I do the bulk of my homework and stuff during my downtime*

at work or on my breaks.” The VDS allowed her to access the studio from anywhere and still participate in class in spite of her busy work schedule. Another student stated that the being asynchronous allowed more time to reflect on peers’ work: “[...] I have time to think about it. I mean I don't always have to answer right away, but it's nice [...] and maybe sit with it, and kind of have the wheels turning.” The asynchronous nature of the case studies allowed for flexibility and reflective practice (Schön,1987), which is essential to SBL. Students in both case studies completed critiques, provided feedback to peers, and were able to progressively iterate toward a solution. In both case studies, student perceptions were overall favorable. One participant interviewed described the ease of using the VDS to review her peers’ feedback: “It was it was nice because you know [...] right on the side of your work, you can see [...] in a list of all the people's response [...] it was definitely helpful.” The layout of the VDS allowed participants to easily search for and view peers’ work. The VDS homepage allowed students to view active projects, identify who needed a critique, and view recent submissions.

Asynchronous technology failed to support dynamic peer collaboration

The technology used for the VDS had limitations. During a critique, students were required to respond to at least two people or a set group. When examining student participation, students only provided an initial response, rarely responded to peers’ critiques, and rarely extended beyond the required amount (see Table 1). The technology in this study did not promote the levels of student interactions intended, and the majority of students simply went through the motions, completing activities because they were required to as part of a grade. Students in face-to-face studio environments typically thrive off peer collaboration and learning (Kvan, 2001), but in this collective case study, participants did not contribute to a back-and-forth communication process. Instead, communication was one-directional, meaning it was student-to-student or instructor-to-student, with no response back.

Table 1: Participation Averages

	Mean # of Critiques per student	Mean Word Count for each critique	Mean # of Replies
<i>Case Study 1: Assignment 1 N=10</i>	2	197	0
<i>Case Study 1: Assignment 2 N=10</i>	2	562	0
<i>Case Study 2: Assignment 1 N=7</i>	3	113	0
<i>Case Study 2: Assignment 2 N=7</i>	3	162	1

The asynchronous nature of the VDS further impacted the critique; typically critiques involve the discussion of and sharing of ideas in order to develop design projects (Kvan, 2001). However, in this case, the VDS environment did not meet all of the students’ needs in order to foster the appropriate levels of collaboration. For example, one participant indicated that not being in a face-to-face environment was a barrier in forming a sense of a connection with peers: “[...] I didn't ask anyone any questions because [...] there's a disconnect between everybody [...] because it's not like a classroom where you could just turn to your left and right, and form any type of rapport.” The asynchronous nature of the VDS isolated students and led to limited discussion and debate among peers, both of which are important aspects of the signature pedagogy (Cennamo & Brandt, 2012). Participants reported that more direct notifications (or pings) when others provided a critique would have been helpful to promote engagement and lessen isolation. Further investigation of the tools and technology in conjunction with social interactions should be explored in an effort to increase the discussion aspect of the VDS that was limited in this study.

Students sought technology alternatives to engage in deeper discussion

Participants in both case studies reported that they wanted to engage with their peers, but the VDS environment was not allowing them to adequately do so. One participant from the first case study discussed how she did not complete a critique in ELMS: “I did kind of my own personal experiment on one after I wasn't getting a lot of feedback. And I took it to Facebook....and many of my friends ripped me apart and helped me build it to something better...” In the second case study, participants reported that they utilized other technology to communicate and collaborate. For example, one participant described in the interview that he wanted to directly communicate with a peer and could not: “[...] I sent them a message outside and saying like 'hey - you want to see your idea in action? This is kind of what I did with it.' [...] And then they commented on it and critiqued it a little bit [...]

through our canvas message.” This student used Canvas (the University LMS), not ELMS (the VDS), to communicate with peers for a critique. The notion that students were critiquing by using technology not provided in the class suggests that multiple technologies and methods for supporting discussion around artifacts were needed.

Conclusions and implications

This study provides perspectives on utilizing a VDS in SBL courses. One underlying objective of this study was to investigate the characteristics of a VDS that allow students to experience a successful critique process in a virtual environment. By analyzing two asynchronous SBL courses, we were able to examine the beliefs and practices associated with facilitating a critique in a VDS. The findings suggest that students recognized the affordances of being asynchronous and that the VDS was effective in allowing students to participate and conduct critiques. In both case studies, participants saw value in being online as it allowed for flexibility in students’ schedules and wider availability, meaning students could be located anywhere, yet still participate in collaborative work (Bradfoot & Bender, 2012).

The findings revealed insight into the prevalence and growth of online education models and provide implications for a redesign of the structure of the course requirements of a studio-based course. Consistent with other studies on a VDS, continuous dialogue is a central component of critique and typically involves students engaging in dialogue with the artist (Vyas et al., 2013). A response to an initial critique, which is equally as important to the critique process, involves aspects such as answering questions and posting new ideas. However, this environment lacked the continuous dialogue component of a critique. It was found that due to the strict course requirements and procedures, the dialogue became largely one-directional and involved only a small number of students. Course requirements should have less rigid peer critique requirements and should promote the idea of responding to peers to initiate continuous dialogue.

Furthermore, due to the lack of interactivity and responses, participants, sought out alternative forms of technology to conduct critiques when the immediate environment was not meeting their needs. This lack of interactivity leads to the idea that a focus should be placed social presence in the online experience (Whiteside, 2015) in order to promote a level of collaborative discourse in SBL. Building relationships in online courses are important for students to connect and engage with each other (Whiteside, 2015) and to the studio pedagogy in order to encourage connections in the iterative design process (Cennamo & Brandt, 2012). Further exploration is needed to synthesize and develop methods to use in online critiques and promote student collaboration.

References

- Broadfoot, O., & Bennett, R. (2003). Design studios: Online? Comparing traditional face-to-face design studio education with modern Internet-based design studios.
- Brocato, K. (2009). Studio based learning: Proposing, critiquing, iterating our way to person- centeredness for better classroom management. *Theory into practice*, 48(2), 138-146.
- Cennamo, K., & Brandt, C. (2012). The “right kind of telling:” Knowledge building in the academic design studio. *Educational technology research and development*, 60(5), 839- 858.
- Creswell, J. W. (2013). Research design: Qualitative, quantitative, and mixed methods approaches (4th edition). Thousand Oak, CA: Sage.
- Hetland, L., Winner, E., Veenema, S. and Sheridan, K.M. (2013) Studio thinking 2: The real benefits of visual arts education. 2nd ed. New York: Teachers College Press.
- Kvan, T. (2001). The pedagogy of virtual design studios. *Automation in Construction*, 10(3), 345-353.
- Sawyer, R. K. (2012). Learning how to create: Toward a learning science of art and design. In *Proceedings of the 10th International Conference of the Learning Sciences (ICLS 2012)* (pp. 33-39).
- Stake, R. E. (1995). *The art of case study research*. Sage.
- Vyas, D., van der Veer, G., & Nijholt, A. (2013). Creative practices in the design studio culture: collaboration and communication. *Cognition, Technology & Work*, 15(4), 415-443.
- Whiteside, A. L. (2015). Introducing the Social Presence Model to Explore Online and Blended Learning Experiences. *Online Learning*, 19(2), n2.
- Yin, R. K. (2003). Design and methods. *Case study research*.