

Cataloguing Positive Outcomes of Online Studio Instruction During COVID-19

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Abstract: Prior to COVID-19, there was a limited body of work about online studio instruction in the field of landscape architecture. Yet, over the past two years, this work has expanded due to widespread stay-at-home orders and quarantine protocols. While it is undeniable that remote studio courses present a range of challenges for students as well as instructors, this paper seeks to understand if any positive outcomes can be gleaned from the studio experience during COVID-19, and if so, how these outcomes might be thematically catalogued to help shape the future of studio instruction for the field of landscape architecture. To address these questions, quantitative and qualitative data were collected from a total of 54 undergraduate students enrolled in an urban design and planning studio in 2020 and 2021. The instruments for collecting data included: pre-quarter surveys, course evaluations, and written reflections. While students in both courses had many concerns about their online studio experience, data from the course evaluations and written reflections suggested that there were, indeed, positive outcomes from the online studio experience. For clarity, this data was collected and then catalogued into five main themes: structure, collaboration, immersion, delivery, and equity. As the field of landscape architecture shifts towards new ways of teaching, learning and thinking about post-pandemic design, perhaps these five themes could be used to speculate about future educational approaches.

Keywords: Design education, studio pedagogy, emergency remote teaching, online instruction

1 Introduction

Online instruction has long been used in higher education and there is a wealth of literature about its successes, challenges, and suggestions for best practices. Furthermore, over the past decade, students have expressed a growing preference for this mode of learning (ALLEN & SEAMAN 2016, PAECHTER & MAIER 2010). Yet, in the field of landscape architecture, there is a limited body of work about this topic (NEWMAN et al. 2019). Most of the peer-reviewed work on online instruction for landscape architecture centers on lecture-based courses; and within these classes, it has been documented that online instruction can help increase enrolment and recruitment, create more flexibility for course scheduling, increase student self-motivation, and remove geographic barriers for instruction (NEWMAN et al. 2019). Yet, when it comes to design studios, most of the literature about online instruction focuses solely on technological delivery methods, rather than holistic perspectives (NEWMAN et al. 2019).

One potential reason for this dearth of research might be because many instructors place the traditional studio experience at the core of design education. It is meant to be hands-on, experiential, iterative, place-based, and is often a prime example of “learning by doing.” Many instructors believe that design studios are defined by intense interaction between students and instructors and require in-person dialogue and questioning (SHULMAN 2005). Furthermore, there is the belief that the small group learning environment fostered in physical design studios allow for maximum creative expression (QUINLAN et al. 2007).

Even prior to the emergence of COVID-19, there was hesitation in the field of landscape architecture about the possibility of teaching studios online. For example, many instructors

were concerned that the communication methods supported by online instruction were simply not sufficient for studio courses; there was a belief that online tools lacked the interactivity one could get by being face-to-face (GEORGE, SHELTON & WALKER 2017). There was also a general concern about academic integrity in an online context (NEWMAN et al. 2019).

Then, when the threat of COVID-19 began growing and communities began locking-down, many design instructors teaching studio had no other choice but to shift to emergency remote teaching (ERT) – some in just a matter of weeks or days. This quick shift to online instruction revealed a number of challenges for landscape architecture programs – a topic that was widely documented in the early months of the pandemic. One example of this was “Field Notes on Pandemic Teaching”, a five-part essay instalment put together by Places Journal primarily on the topic of *Zoom University* and the myriad of technical and philosophical issues that went along with it (PLACES 2020). Another example was “Making in the Void”, a study looking at the impacts of COVID-19 on six academic studio courses in Australia. In this piece, researchers unpack how the shift to online learning required more self-motivation and steeper learning curves for student success (WALLS et al. 2021).

While it is undeniable that online instruction for studio courses presents a range of challenges for students as well as instructors, this paper seeks to understand if any positive outcomes came out of pandemic studio teaching. Perhaps the last year and a half fostered educational innovation in the field, forcing landscape architectural instructors to practice what is often preached their studio settings – to be nimble, to adapt, to evolve. And perhaps there is no going back to “normal”; maybe this experience will create a new normal for how landscape architecture education is delivered.

This paper seeks to build upon a growing area of interest in the field – how to identify the silver linings of online design instruction and how to continue these practices in a post-pandemic world (see BIRKELAND & HANDEL 2021 and WALLS et al. 2021). In summary, the research outlined in this paper seeks to better understand:

1. If positive outcomes can be gleaned from the online studio instruction experience during COVID-19?
2. And if so, how these outcomes might be thematically catalogued to positively shape the future of studio instruction for the field of landscape architecture?

2 Methods

The course used for this study was an undergraduate urban design and planning studio focused on designing large-scale landscapes at regional, sub-regional, and neighbourhood scales. The course focused on understanding complex social, economic, and environmental factors, developing sustainability priorities and strategies, and applying them through design and policy. The course was first taught in the spring of 2020; it started just two weeks after a state-wide lock-down. It was then repeated in the spring of 2021. For both classes, all elements of the course were fully remote, due to public health concerns surrounding COVID-19, and were also offered asynchronously to initially accommodate students who were abroad or those who needed to work during class time. To do this, all lectures were recorded via Zoom and posted for students in different time zones, or for students with unique scheduling situations.

Quantitative and qualitative data were collected from a total of 54 students enrolled in the course in 2020 and 2021. The instruments for collecting data included: pre-quarter surveys, course evaluations, and written reflections. The pre-quarter surveys were taken by 49 of the 54 students, a 91% response rate, and involved three open-ended questions: 1 – Do you foresee any challenges that might affect your success in this course? 2 – How can I make this quarter a positive learning experience for you? And 3 – Is there anything else you would like me to know? The course evaluations and written reflections were taken by 43 of the 54 students, an 80% response rate, and involved 20 closed-ended questions (Table 1) with likert scaling and space for students to express feelings about the course. All three instruments were delivered using the Qualtrics platform.

Table 1: Questions included in the course evaluations

1	Please indicate the overall educational value of the course.
2	The course improved my analytical and research skills.
3	The course improved my ability to develop urban design frameworks.
4	The course improved my communication skills.
5	Please indicate the overall teaching effectiveness of the instructor.
6	The course is well organized.
7	I know what is expected of me in this class.
8	The instructor explains clearly.
9	The instructor displays enthusiasm for the subject matter.
10	Course assignments are valuable components of this course.
11	In this course, I feel challenged and motivated to learn.
12	The amount of work expected in this class is reasonable.
13	My instructor returns assignments quickly enough for me to benefit.
14	Assistance is available throughout the studio sessions.
15	Grading practices in this course are fair.
16	I learned a great deal in this course.
17	Field trips/exercises are valuable components of this course
18	Exams in this course are good, overall.
19	The instructor is available for consultation outside of class.
20	In this class, I am treated equitably and with respect.

3 Findings

3.1 Pre-quarter Feedback

In the summer of 2021, data from both courses were collated and reviewed. Through this process, it was found that students had many concerns about their online studio experience in 2020 and 2021. As a summary, twelve primary limitations were gleaned from the pre-quarter survey.

The biggest concern, with mentions in 27% of survey responses, was insufficient access to software needed for the class. Like many other upper division undergraduate design studios, this studio relied heavily on AutoCAD, Rhinoceros 3D, ArcGIS, Lumion and the Adobe Creative Suite (Illustrator, Photoshop and InDesign) – programs that are expensive to purchase and often require robust hardware to operate. As a result, this concern tended to be greater for lower-income students who could not purchase the software or upgrade their hardware.

In an effort to lessen the burden on these students and to level the playing field across the class, a virtual lab was developed to allow students to log into a remote desktop to access programs.

The second major concern students mentioned in the survey related to Wi-Fi access and strength, with 10% of students citing this concern. Many of the students in the two classes were living at home or in apartments with other students – both situations often strained the Wi-Fi strength, leading to slow internet speed. This often led to lags in the virtual lab and in Zoom meetings. To aid with this issue, students in need were mailed portable Wi-Fi hotspots to strengthen their internet connection.

The next four concerns were mentioned in 8% of survey responses. The first was a loss of peer-to-peer learning in a remote context. As a result, the use of break-out rooms in Zoom and the additional use of messaging platforms like Slack and WhatsApp were encouraged to increase student-to-student engagement. Another concern was that some students needed to work more in order to support themselves or family members. While this issue could not be directly addressed, students in this situation were allowed to take the course asynchronously and were given additional flexibility to complete assignments. Another issue related to differences in time zones between where students were living and where the class was being taught. The courses had students in China, Brazil and Sweden, with some students having a 16-hour offset between their time and class time. These students were given permission to take the course asynchronously. Additionally, the course instructor set up a weekly meeting (outside of class time) to check-in with these students and set up separate reviews to accommodate the time change. The last concern in this group related to hardware access as some students did not have access to a personal computer or printer. Students without computers were able to sign up for a loaner laptop through the college and all assignments were able to be delivered digitally.

The next four concerns were mentioned in 6% of survey responses. The first issue related to the lack of a site visit and the difficulty of relating to the physical context of the site. To help fill this gap, a virtual site visit was developed for the students. This site visit included oblique aerials, 360 panoramic images, on-the-ground imagery, and a 3D model of the site. Another concern focused on decreased feedback and face-to-face interaction with the instructor. Thus, an online digital whiteboard was used to facilitate additional communication between the students and the instructor. Outside of class time, the instructor could review work on the whiteboards and leave feedback for students. The last two concerns related to personal health and access to a safe working environment. Again, while these concerns could not be directly addressed, students in these situations were able to take the class asynchronously and were given additional flexibility to complete assignments.

The last two concerns related to family health (4%) and Zoom fatigue (2%). Again, while issues related to student's families could not directly be addressed, these students were given additional flexibility in class. For the concern related to Zoom fatigue, the two classes were structured with many short breaks so that students could periodically step away from their computers. Additionally, instead of having two or three large assignments over the course of the quarter (as is typical with most studio courses), the instructor decided, instead, to assign mini-assignments each week. This was done so that students would not spend extended amounts of time in front of their computers.

3.2 Post-quarter Feedback

While students in both courses had many concerns about their online studio experience, data from the course evaluations and written reflections suggested that there were, indeed, positive outcomes from the online studio experience. For clarity, this data was collected and then catalogued into five main themes: *structure*, *collaboration*, *immersion*, *delivery*, and *equity*.

For *structure*, it was found that, despite being online, the curriculum material for the studio had a high level of clarity and focus and that the instructor was highly responsive and communicative. On average, 91% of students who took the course evaluations strongly agreed that the course was well organized, 90% strongly agreed that they knew what was expected of them in the class, and 88 % strongly agreed that the instructor explains clearly. In the written reflections, one student wrote: “The course was very well organized and ran smoothly despite being online.” Another stated: “This class was one of the best, if not the best I have had with a studio. Even though it was online, it was well organized and very clear to understand.” Another commented: “This is the most productive and organized a design studio class has ever been. [The instructor] was incredibly organized, inspiring, and approachable. Especially during the chaos of virtual schooling, [the instructor] made the transition as smooth as possible.” Additionally, it was found that the weekly mini-assignments were helpful in reducing Zoom fatigue and overall anxiety. On average, 89% of students who took the course evaluations strongly agreed that the course assignments are valuable components of the course. One student wrote: “I really liked how [the instructor] would give us small projects each week that would eventually go into our final design. I found this method very useful as it allows me to learn material without feeling overwhelmed.” Another stated: “It felt like a true studio even though we were working with the challenges of an online format, and the assignments were well paced and built smoothly on each other.”

For *collaboration*, it was found that, in some ways, online instruction could foster cross-pollination. For example, online instruction reduced geographic barriers, allowing the instructor to bring in guest speakers from across the world to speak on Zoom about their area of expertise. This typically would not happen in a traditional studio setting. Over the course of the quarter, students heard from practitioners spread across the United States and China. The online studio also fostered interaction between students via messaging apps like Slack and WhatsApp and through digital whiteboard programs like Mural. In the written reflections, one student wrote: “Every studio should be modelled after the organization and collaborative platforms used in this studio.” Furthermore, despite being online, students felt there was sufficient interaction with the instructor. On average, 86% of the students who took the course evaluations strongly agreed that assistance was available through studio sessions, and 93% strongly agreed that the instructor was available for consultation outside of class.

For *immersion*, the students were exposed to new digital tools and methods. For example, each student used a digital whiteboard for sketching and sharing ideas with classmates and their instructor (Figure 1). The primary platform that was used for this was called Mural. On the whiteboard, students would post their design progress twice a week for desk critiques and class-wide pin-ups. Through the program, students and the instructor could draw together, leave comments on digital post-its, import precedent project images, and reference external websites and reports. In a way, it functioned as a pin-up wall that could be accessed from anywhere and at any time. Additionally, in lieu of a traditional in-person site visit, students experienced a virtual site visit. With the help of a drone, oblique imagery, 360 panoramic

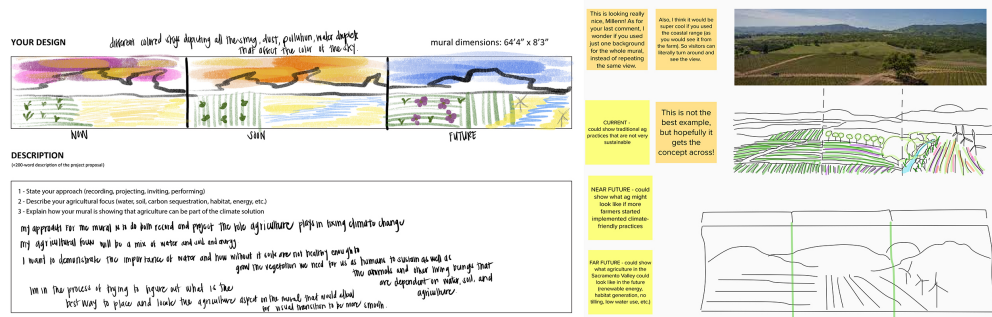


Fig. 1: A digital whiteboard fostered peer-to-peer and student-to-instructor interaction

images, on-the-ground photos, and a 3D model of the site created with a point cloud and draped aerial imagery, students investigated the site from afar (Figure 2). And while this exercise came nowhere close to the experience of visiting the site in-person, it exposed students to new tools they could use in the future. Despite being virtual, 78% of students who took the course evaluations strongly agreed that the “field trip” was a valuable component of the course. Lastly, in lieu of an in-person community meeting, students helped develop an online questionnaire to engage and survey local community members about the site and their visions for it. In the end, this tool helped to reach a broad set of neighbours, including those who do not traditionally attend in-person meetings.



Fig. 2: Students conducted a virtual site visit using a 3D model developed with a point cloud and draped aerial imagery. Contextual oblique imagery, 360 panoramic images and on-the-ground photos complemented the model.

For *delivery*, students had to expand their traditional modes of storytelling to engage a virtual audience during reviews. Instead of printing out large 24x36 boards, pinning them up on the wall, and speaking directly to them, students had to find alternative ways to communicate their ideas. To do this, some experimented with simple videos and animations to show their design process and others explored choreographed slide decks. Furthermore, almost all of the

students crafted a tight narrative to guide their presentation. Due to the remote context, many students wrote scripts for their presentations and read from them during reviews. This approach helped students provide a holistic overview for reviewers.

Lastly, for *equity*, while it is true that online studio instruction can create or exacerbate existing inequities between students, there are some ways in which it can create a more equitable space. On average, 88% of the students who took the course evaluations strongly agreed that in the class they were treated equitably. For example, the asynchronous structure (all sessions were recorded and shared with students) allowed students to work, care for themselves, or care for their loved ones without missing class and losing participation points. The recording of all sessions also allowed non-native English speakers or students needing additional instruction to review content by re-watching lectures. The remote format also broke down geographic barriers by allowing students to live at home or in more affordable locations further from campus. This allowed some students to save money on rent and food. The remote studio also exposed which students did not have sufficient bandwidth, software, or hardware required for the course; allowing the larger faculty group to provide better support for those in need. For example, students in need were sent loaner laptops, WiFi hotspots, and additional course materials.

4 Discussion and Conclusion

While the study outlined in this paper identified positive outcomes from the online instruction of this particular undergraduate studio course and catalogued these findings into five main themes, it had many shortcomings. First and foremost, the data was limited, and the study was difficult to replicate given the unique situation of COVID-19. Furthermore, while no identifiable information was collected about the students, the relatively small class sizes could have created a bias in the data. Lastly, it would have been helpful if the same class had been taught in the spring of 2019, to better understand how the online instruction differed from in-person instruction for this particular course and instructor.

To conclude, as the field of landscape architecture shifts towards new ways of teaching, learning and thinking about post-pandemic design, perhaps these five themes could be used to speculate about future educational approaches. How can positive outcomes gleaned from online studio instruction during COVID-19 help shape the future of design studios? And is there potential for a more blended and hybridic approach?

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