Level of Student Collaboration in Online Design Studios

Upeksha Hettithanthri[1,2]

[1]*NSBM Green University Town , Homagama, Pitipana, Sri Lanka*
upeksha@nsbm.ac.lk

[2]*Stockholm University, Kista, Sweden*
dilini@dsv.su.se

ABSTRACT

The collaborative learning is a major component in architectural studies. This study is aiming on exploring the level of collaboration of students in the online design studio. For this study 5 collaborative groups were observed, and 25 students were selected through convenient sampling technique. The participants were observed by adopting naturalistic observation and were interviewed with open ended questions at the end of the design process and the data was analyzed through the content analysis. Among the 5 groups, 3 have shown a medium level of engagement and one group has shown a high level of engagement and one group has shown a very poor level of engagement.

17. INTRODUCTION

Collaborative learning is placed at a higher level of architectural education. Architectural students are engaging in group tasks as a part of their learning process. The students are learning by doing , with the engagement of their peer learners(Shamsuddin et al. 2010). Due to the pandemic, the architectural studies were transferred into an online platform where one to one learning was replaced in a digital platform. Students got engaged through Zoom or Teams platform where everyone got connected through a device. The typical architectural education domain is heavily based on studio learning, where the design students and lectures are working together (Abdullah et al. 2011).

The architectural learning and teaching processes have been established to place the design studio at the center. In traditional practice, students learn to solve real world problems through

architectural design solutions while engaging in design studio activities. In characterizing the design studio, it is a collaborative learning environment which allows students to engage in their design processes either individually or as groups with the support of lecturers and tutors (Abdelmonem 2016). The physical setup of the design studio is heavily contributing to the design process of students by providing a material space for them to engage in their design activities (Davey 2019). The change of the design studio context from physical infrastructure to digital platform is indeed influential to the design process of the students, and it could change the use of digital tools during the design process as well.

In the architectural design studio, students are getting the opportunity to work with other peer learners. As depicted by Rahbarianyazd (2019) collaborative engagement with an architectural design studio can increase the design thinking ability of the students (Açikgöz 2015). Students do brainstorming, reflections, and collaborative critics while they are engaging in group works (Al-Mogren 2006).

1. Collaboration in virtual platforms

The pandemic has made a significant difference in the education context across the globe. The students who used to study in classrooms were shifted to online education suddenly. However,

this movement has made drastic changes in the pedagogic design studio education in Sri Lankan context. Before 2020, in Sri Lankan context, there is no evidence found in online or blended learning platforms created for architectural education. The entire architectural education was dependedent on the design studio delivery where the design students and design tutors med face to face.

The collaborative engagement was in face to face mode and the students were heavily using paper modeling, paper mockups and on paper demonstrations for their learning purposes. However, the sudden movement made to the online platform has made some changes on the way of collaborating between students. In the pedagogic design studio, students collaborate through brainstorming activities, presentations, and peer critics. The online mode has created a reflective platform for the above activities digitally. There students see the designs of the other students, the comments made by the lecturers through the digitally mediated mechanism.

Online learning has brought, many benefits to the students. It has the ability to network students from different geographical locations. The place they are located in was not an important factor, but the data strength and the networking capacity have made some impact to the online learning mechanism in Sri Lankan context. The students and lecturers were combined through a created platform and they depended on the platform created there were some collaborative options which students could follow in virtual design studio.

1.2 **Problem Statement**

Within the design studio context, students are engaging in many collaborative activities and their engagement was directly visible to the studio lecturers. However, the movement made to virtual design studios, the student engagement was difficult to view because, they were engaged in the activity by being in various places. The aim of this study is to understand the level of collaboration of design students when they are engaging in online platforms. Despite the many benefits brought through the online platforms, there are some limitations which could make an impact of the student's learning. Through this study we are exploring the level of student engagement within a virtual design studio.

1.3 **Research Questions**

In order to find the level of collaboration in the online design studio, we constructed the below research questions. The key focus on this study is to observe the level of collaboration within a set of student groups who are collaborating through an online platform.

1. How the students have collaborated in the online design studio?

2. What is the level of engagement observed in the online design studio?

2.METHODOLOGY

For this study, I adopted the qualitative research methodology. The participants were selected through convenient sampling technique. 25 Interior design undergraduates were selected for this study and they were clustered into 5 groups with 5 students in each group. The students were in their 2nd year 2nd academic semester and the reason to select 2nd year students for this study, because they were having one-year experience on design studio engagement at university. All the students were between the age limit of 19 -23 and there were 12 male students and 13 female students. The students were divided into random 5 groups.

The study context is created through Zoom platform. Students were assigned with a design task and were asked to develop design concepts through an online collaboration. For this study, 12 collaborative hours were assigned. Students were divided in to 5 groups and put them in to 5 breakout rooms to work collaboratively. Researcher has observed the collaboration of each groups and taken notes in a field diary. Each group was observed in intervals of every 15 minutes. Important moments were captured through screen shots and were used for data analysis.

2. Data collection

The data was collected through the field diary which was maintained by the researcher. Further, researcher has recorded the entire meeting by using the recording option available in Zoom. The collaborative moments were captured through screen shots and were saved with a time, date and group number note.

The 12 collaborative hours were assigned for this study with 4 hours of online engagements per day. After 3 days of collaborative engagement with 12 hours of engagement, the groups were interviewed with open-ended questions. The interviews were recorded and were transcribed for the data analysis.

2.2 Data Analysis

Data analysis was guided by 6 phases of thematic analysis and an inductive approach has been undertaken (Hoskyns n.d.). Familiarization with the data, creating initial codes, searching for themes, reviewing themes, defining the themes, and reporting were the steps followed in generating themes. Initially data had been categorized according to the sources of data generation. Observation was mainly analyzed through the field notes taken by the researcher (Tracy 2013). Data was generated through questionnaires and was handled separately. Students field notes and design tutors field notes were coded separately (Tracy 2013). The researcher's own observational records and field diary were coded in the second stage.

Data generated from the questionnaires and all the other modes were analyzed through a thematic analysis (Tracy 2013). All the data were fed in to MAXQDA 11. Before feeding data in to MAXQDA 11, an affinity diagram was created by the author in order to have an initial understanding on codes, categories and themes. The benefit of using thematic analysis was that it supported in identifying patterns in data.

The analysis started with coding the data. The observation notes and interviews have generated primary codes and those primary codes have generated 15 secondary codes. Those 15 codes were further clustered in to 5 categories. We identified four themes to describe the level of engagement of students.



Fig1: Thematic Map

3. RESULTS

The thematic analysis has shown the various levels of engagement of the students in a virtual platform. The codes which are labeled as; sharing information by using other collaborative platforms instead of Zoom , brainstorming openly in Zoom, multiple leadership, using chat box for brainstorming, making group calls, use of PowerPoint as a tool to store information has been clustered under the category of self-motivated. Those students who were engaged in the above activities were engaged in the given task with self-motivation.

Codes labeled as brainstorming openly in Zoom, made group calls , had white board collaboration, shared information by using other collaborative platforms that have clustered under the category

of continuous engagement which generates the theme of highly engaged in online platform.

The codes labeled as leader is dominating the group. This category involves white board collaboration, no internet access, less signal strength , multiple leadership, use of chat box for brainstorming which has led the researcher to identify as engaged time to time which has generated the theme - moderate level of engagement.

The codes depicted as leader is dominating the group; there is no internet access, lesser signal strength, sketching is done individually and shared in the chat box, own decisions were generated in the fourth category , individualized work was done within a collaborative group. This approach supported on identifying the theme – poor engagement.

Leader is dominating the group, sketching is done individually, and sharing in chat box, being active in social media, sharing ideas time to time, own decisions are made throughout. This pattern has led to the category that indicates that no interest is shown in collaboration. This led to the identification of the theme -no engagement.

In answering RQ 1; "How the students have collaborated in the online design studio?" Researcher has observed that the students have collaborated through various modes of communication platforms. They have used the white board option to draw, write, map and share their ideas, however it was interesting to observe that, even though the white board is a collaborative platform, students have created their own individual spaces when collaborating.

The codes labeled as; brainstorming openly in Zoom, usage of Power point, making group calls, get connected through other social media platforms , white board collaboration, using chat box are the methods that were observed through this study , which students have utilized for collaboration in the online design studio.

In answering RQ 2; "What is the level of engagement observed in the online design studio?" based on the results the researcher has developed 5 models which could explain the collaboration and inter-student collaborative connections made within each group (refer fig 2).

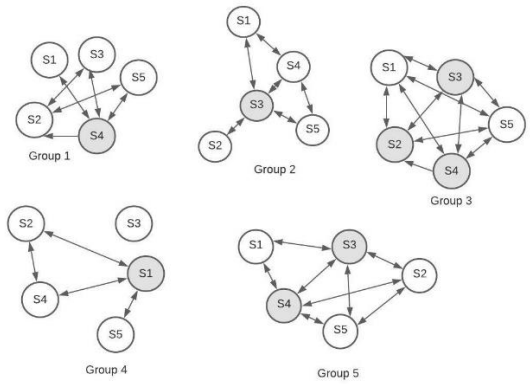


Fig 2 : Collaborative engagement among group members

Among 5 groups group no 1 and group no 3 have shown a high level of engagement. Group 1 was dominated by the group leader, but all the students were giving inputs collaboratively by using the white board option in Zoom, using the chat box and by creating separate chat groups through other social media platforms like WhatsApp. The group no 1 has collaborated, by being centered and activated by the group leader. Group 3 was coordinated by three key student leaders and all of the group members were collaborating with all the members of the group throughout the allocated time period. They have shown a high level of engagement within this collaborative group.

In observing the data generated by group 2, the researcher noticed that four students were actively engaged with the collaboration whereas one student got individualized and kept the collaboration only with the group leader. This group has shown a moderate level of engagement by being in an online platform.

Group no 4 was guided by one leader and the group communication was centralized to the leader. 3 students were collaborating with the group leader and one student got isolated without any collaboration made within the assigned group. Students were engaged in social media chat groups than white board collaboration. This

group has shown a poor level of engagement in the online design studio.

Group 5 was led by two group leaders and the other three students were giving collaborative inputs to both leaders. Both leaders were consistently interconnected throughout the assigned time period. They used the white board for collaboration and made a separate Power point presentation. Moreover, they were very active in the online chat box. The researcher observed that Group 5 has utilized many digital tools available in Zoom for their collaboration. Group 5 has shown a high level of collaborative engagement.

4. DISCUSSION

The aim of this study is to understand the level of collaboration of architectural students in an online platforms. In order to obtain that understanding, 5 collaborative groups with 5 students in each group were observed. For this study , qualitative research methodology was adopted and data was collected through naturalistic observations and open-ended questionnaires. The data was analyzed through thematic analysis. The study has shown the level of collaboration of architectural students in online platforms. Usually in architectural studies, collaboration is happening in face to face mode in design studio context. The student engagement has been seen in four levels such as highly engaged, moderate level of engagement, poor engagement and no engagement.

It was observed that the students who have shown the high level of engagement have utilized many collaborative tools available in Zoom such as the white board and the chat box. They were also connected in other chat forums such as WhatsApp and other social media platforms. The students who have shown the medium level of collaboration have done brainstorming openly in the Zoom forum utilizing the chat box and white board.

Some students have been individualized within the collaborative groups, due to the lack of signal strength or no internet supply at all. Some students have maintained the direct collaboration only with the group leader and have not maintained a group collaboration throughout. Furthermore, we observed that the exposure to many digital collaborative platforms other than Zoom platform has increased the collaboration amongst students in the online design studio.

This fact needs to be further investigated and there is a gap in literature which needs to be filled with more empirical studies on the online collaboration of architectural students.

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