

VIRTUAL LEARNING PLATFORM IN ARCHITECTURE DESIGN STUDIO FOR MAINTAINING AUTONOMY AND AUTHORITY

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Abstract

This paper highlights a strategy for design studio learning due to the restriction during the COVID-19 pandemic that requires an immediate change from physical, face-to-face learning to virtual, online learning. The study examines how creative design and knowledge construction could be monitored throughout the learning process in the virtual studio. The study reflects upon the autonomy and authority of students and tutors, respectively, as they utilise a particular platform for virtual learning. The virtual communication platform becomes the media to accommodate reflection, peer learning, benchmarking and constructive feedback as essential parts of design learning. The study argues that it is essential to establish a strategy to balance the tutor's space in maintaining their authority and the students' space in building their autonomy as a design learner in the virtual studio environment.

Keywords: virtual studio; autonomy; authority, virtual learning platform; architecture pedagogy

INTRODUCTION

A design studio is a distinct feature in architecture pedagogy (Andia, 2002; Crowther, 2013; Ioannou, 2018). A studio is a place where students develop their design skills to prepare for their creative practice. It is a place where the transfer of knowledge mainly takes place through maintained face-to-face communication between tutors and students (Goldschmidt et al., 2010; Scagnetti, 2017). Learning activities in design studio were intended to develop various critical design skills, such as independent,

reflective attitude (Harahap et al., 2019), representation and documentation skill (Crowther, 2013; Wahid & Atmodiwirjo, 2018), and to develop their autonomy (Goldschmidt et al., 2010; Kocaturk, 2017) to create and to design. On the other hand, studio learning also becomes a place of authority (Goldschmidt et al., 2010), where tutors control the learning outcomes and outputs in the studio through various means: delivering lectures, providing constructive feedback, or setting up a deadline. Both students' autonomy and tutors' authority are important in achieving the studio learning objectives.

The tutors' authority and students' autonomy could be achieved not solely due to the competence of the tutors or the students. However, the learning setting could also play an important role. In many architecture education institutions, the studio appears as a vast space facilitated with desks—wide enough for students to draw in large format and make models—, chairs, and panels or vertical surfaces alike for pinning up works, announcements, and other materials. Such a setting allows for activities, including regular discussion and crits—a session where students present, defend, and convince their design to a panel of reviewers—, and exhibitions (Ioannou, 2018). These activities are an important part of the studio learning process in architectural education (Crowther, 2013; Goldschmidt et al., 2010; Scagnetti, 2017).

COVID-19 pandemic has forced all the learning activities to move into virtual space. This has raised an issue on the importance of studio space. The absence of a working space where students can produce their works and have a constructive discussion with their tutors has created a challenge of improvising the learning activities that move entirely from physical, face-to-face learning to *online*, virtual learning via various platforms.

VIRTUAL STUDIO: CHALLENGES AND OPPORTUNITIES

There has been a growing discussion on implementing virtual learning in architecture pedagogy

(Kocaturk, 2017). Studies have explored aspects of managing off-studio design learning, from the learning process in a blended mode (Ioannou, 2018; Shannon et al., 2013; Wake & Levine, 2002) or entirely virtual (Crowther, 2013), to its practicality such as the use of various online platforms for updating progress and conducting discussion (Andia, 2002; Kocaturk, 2017). There are obstacles in conducting virtual studio learning, including the belief in the less effectiveness of virtual mode of delivery (Sidawi, 2015) and the requirement of a certain level of technological literacy (Ioannou, 2018).

As the students are expected to work remotely in virtual studio learning, the choice of learning platform becomes critical; it should consider everyone's technological literacy and other influencing aspects such as internet connection. The tutors must understand the essentials of face-to-face studio learning that should be transformed into online learning (Shannon et al., 2013; Sidawi, 2015). The choice of learning platform should also anticipate the possibility of how the new mode of delivery through a virtual environment could accommodate the things that could or could not be done in the traditional, face-to-face environment (Strojan & Mullins, 2002). There is an opportunity that a virtual learning environment could offer a distinctive mode of activities and communication.

An exemplary case of improvisation on switching the mode of studio learning is presented by Ying-Lan Dan and Liz Lambrou (2020) in their article titled *Placing Elsewhere: Approaches for Physical and Digital Flânerie*. The recognisable strategy that they applied in their studio where they acted as tutors is through the expansion of studio topic that initially intended to be delivered through physical activities in-campus into a topic "entirely mediated via screens...off-campus and online" (Dam and Lambrou, 2020, 149). Such a decision shows the early stage of how tutors insinuate their authority upon their studio. Besides the substantial approach, their authority was shown in their choice to utilise a platform so that the switch could go smoothly. The studio especially maximises the use of sharing screen feature in the online platform that they use—sharing screen plays a role as an enabler for the virtual panel created by the student to be accessible by others. Dam and Lambrou (2020) also suggest the importance of *chat-scape* as a place where real-time virtual discussion among students occurs, allowing students to build their autonomy in the studio.

Nonetheless, Ceylan et al. (2020) suggest that decision in switching the mode of delivery from off-line studio to on-line studio learning must consider at least: [1] the platform of virtual learning; [2] the studio content and syllabi; [3] the studio workflow; and [4] the engagement and socialisation among participants. Notably, the switch of the mode of deliveries should not

change the studio culture itself (Andia, 2002). In maintaining the studio culture, one of the challenges is ensuring tutors' authority and students' autonomy could be kept in balance. While these are relatively easy to achieve in a physical, face-to-face studio setting, they become an issue when the whole process is done virtually. It is vital to ensure that the virtual learning media could allow for tutors to perform their authority and at the same time for students to build their autonomy as design-learners. When the studio culture is still preserved in its autonomy and authority, it is expected that the desirable construction of knowledge could be achieved (Kocaturk, 2017). This paper will address the shift to virtual studio learning, particularly the challenges in maintaining the balance between the tutors' authority and the students' autonomy through the virtual learning platform. In particular, we will present an analysis of the case study of virtual learning platforms in a second-year interior architecture design studio at Universitas Indonesia during the COVID-19 pandemic.

METHODS

The study focuses on the analysis of how the virtual platform is utilised in the design studio. In particular, we analyse the utilisation of Google Slides as a relatively well-known and easy-to-use platform in everyday communication in the virtual studio. The platform becomes the media where the conversation occurs during the learning process. The analysis attempts to reveal to what extent autonomy and authority were performed in the virtual studio. For such a purpose, the study maps the recorded activity of the tutors and students in the Google Slides. In particular, this study adopts the mapping strategy applied by Kocaturk (2017) in revealing the studio's participants activity in the virtual studio platform. The mapping becomes the basis for analysing the acts of authority and autonomy by the tutors and the students and how they are related to one another along the process. The mapping result is then analysed through a reflective discussion to inform about what is happening in the studio learning process in detail, hence gaining a comprehensive understanding of the learning process and delivery of the virtual studio from the inside out (Ahmad et al., 2020; Dann & Lambrou, 2020; Harahap et al., 2019).

CASE STUDY: VIRTUAL STUDIO PLATFORM STRATEGIES

The study attempts to make an inside-out reflection on the conduct of Interior Architecture Design 2 (IAD2) course offered in the Department of Architecture Universitas Indonesia, Indonesia. As the COVID-19 pandemic started to affect many parts of the world in the first quarter of 2020, the already ongoing

studios have to make a sudden shift to be completely delivered in virtual settings, including IAD2. A short brief regarding IAD2 is a studio-based course for the second-year Undergraduate Interior Architecture programme, where the students mainly learn tectonic as a design method. Students have never previously engaged in a studio where technology is utilised, even as blended learning. Also, for IAD2, the curriculum requires the students to manually produce drawings, models, and other outputs. The use of 3D modelling or drafting software is not encouraged at this level. It means, during the pandemic, the studio coordinator's primary concern is to find a suitable platform for virtual studio learning.

Universitas Indonesia has its own established online learning platform. However, as online learning in the COVID-19 situation is conducted campus-wide, the IAD2 coordinator has foreseen that the campus's platform would come with several disadvantages. It turns out that there are times when the server could not support the whole activities in the platform, especially in peak hours and exam weeks. In addition, it is notable that students were all went back to their hometown, which means students are now in different time zones. Also, some students even have limited internet access, and not all students have proper gadgets (such as laptops) to do online learning. Considering the situations, the coordinator then decided to use Google Slides. It is an open-access online platform that everyone in the IAD2, including the tutors, had known and familiar with.

Other than Google Slide, the studio also uses several other platforms to help the studio delivery run smoothly. The platforms include Zoom, Whatsapp chat group, and Line chat group. Zoom plays a role as an enabler for the discussion to occur. In Zoom, students and tutors could utilise the sharing screen feature, allowing for the materials created and arranged by the students in their Google Slides to appear for all who attend the Zoom session. Whatsapp chat group were used only by the tutors; it is a platform where tutors discuss the studio's progression and other things that affect it. Meanwhile, the Line group chat consists of tutors and students. It is the place where tutors give general instructions to the students. This study, however, will look closely at the use of Google Slides as the platform where the autonomy and authority of the studio occur beyond merely giving instructions as occur in the Line group chat.

However, the decision on the use of Google Slides mainly lies in its potential for maintaining tutors' authority on the virtual studio and students' autonomy, which is in line with what Ceylan et al. (2020) has suggested. It is supporting tutors' authority in many ways (see Figure 1): 1) It allows tutors to monitor

students' progress actively. Slides became panels that we usually found in the physical studio, through which students pin up their works—although now, it is virtual; 2) The students kept on updating their works by adding new slides on one same file. This way, tutors could see how the students progress throughout the semester. Arguably, the slides even made it easier for the tutors to assess students' outcomes as seen through their outputs. Therefore, tutors could always make suitable feedback to improve students' works; 3) The slides allow tutors to add relevant comments by adding new slides or directly adding comments to the texts or images that the students have updated onto the slides. From the perspective of the studio coordinator, the slides even add the fourth advantage: a helicopter view of the overall studio's performance.

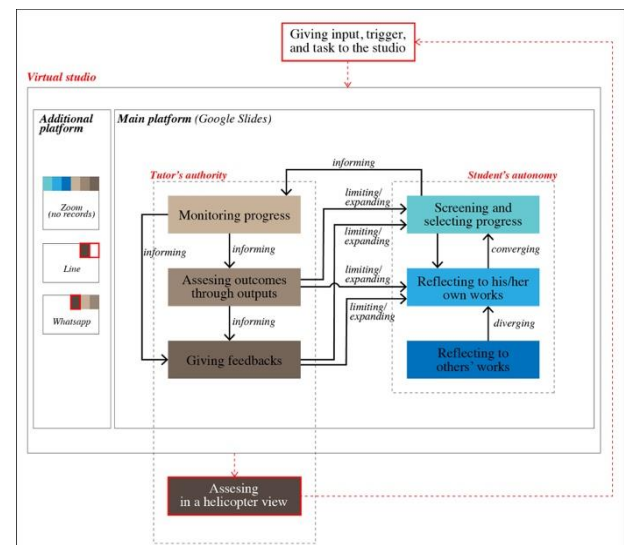


Figure 1. The platform strategies implemented in the IAD2 (Authors, 2021).

Meanwhile, Google Slides supports students' autonomy (see Figure 1) in a sense that: 1) Screening the progress that has been made and updates the selected ones onto the slides; 2) Slides that are kept on being updated by each student became their own *diary* through which they can reflect on their past works and decide what to develop further, what to take notes onto, or what to avoid in their design development—this includes reflecting and responding towards tutors' comments on the slides; 3) As each student has their slides and are shared in one folder accessible by everyone in the studio, students can also make reflection towards other students' slides. It especially becomes an opportunity for the students to discuss each other works and further engage in the learning process. Interestingly, at the end of the course, a student pointed out that the slides gave students a chance to decide when to look at others' works, which is not the case when at the studio where

everyone’s works can be easily seen—reflecting that autonomy does not always mean *full access or exposure*.

GOOGLE SLIDE: A REFLECTION OF DAILY STUDIO PROGRESSION

In the previous section, the roles of Google Slides as the primary virtual studio platform in IAD2 has been discussed. The balance between authority and autonomy (see Figure 1) appears in the form of a dialogue where one aspect affecting other aspects, whether in the same group or on the other group. The *diverging, converging, limiting* and *expanding* are among which insinuate the flexibility of studio execution, emphasising a design process that moves back and forth through reflective practice and creative making. Meanwhile, *informing* is particularly emphasising control upon the course of the studio.

their design independently, or interacting with tutors and other students, including through Zoom sessions. In the diagrams, the blue-shades and brown-shades marks indicate the three aspects of LK’s autonomy and tutors’ authority, respectively.

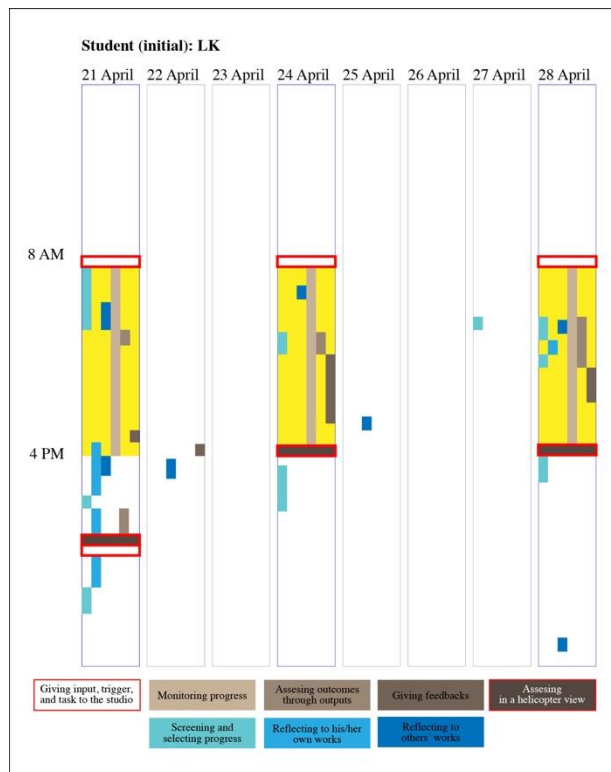


Figure 2. Mapping of recorded authority and autonomy in a student’s slides (Authors, 2021).

Figure 2 shows the mapping of the utilisation of Google Slides by one of an IAD2 student, LK, recorded from 21 April 2020 to 28 April 2020. The diagrams indicate how slides allow certain flexibility to balance the needs for maintaining both tutors’ authority and LK’ autonomy. IAD2 studio time is every Monday and Friday between 8 AM and 4 PM (marked with yellow). Students actively continue their progress during this studio period by doing specific tasks, developing

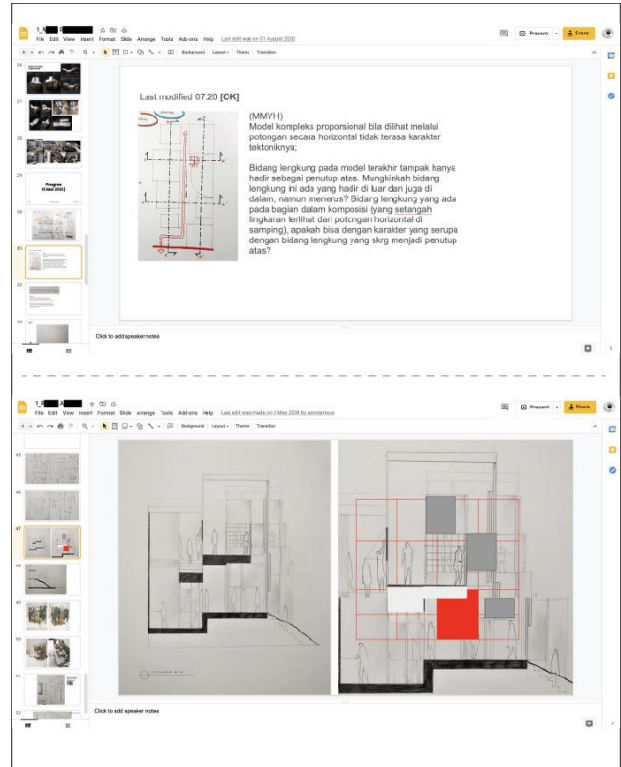


Figure 3. Examples of the feedback given to the students. Written feedback on AR’s slides was given by the tutor asynchronously (top). Marking on student’s drawing on RA’s slides was given by the tutor during a synchronous Zoom session (bottom).

From the mapping in Figure 2, we can see how tutors and students performed diverging, converging, limiting, expanding, and informing. First, the mapping shows that within the recorded time, the general input and trigger were given by the tutors right at the beginning of the studio period and always followed by another input and trigger at the end of the studio session (marked with red outline). It indicates the authority of the tutors in giving instructions to maintain the progress of their studio. Second, tutors also monitor the slides throughout the studio period. Although the monitoring did not occur all the time, the tutors were mainly online during that period, hopping from a student’s slide to another student’s slide, from one group to another. In LK’s case, when the tutor monitored students’ progress, tutors were also recorded assessing outcomes through the outputs presented in LK’s slides. This process mostly did not take much time, although an exception

occurs on 28 April where the assessment took quite some time. The assessment also occurs outside of the studio period, as seen on 21 April. This assessment period particularly indicates when tutors could “think about the students works in a wider perspective” (Ceylan et al., 2020, p. 210) which would then affect their feedback to the students. It allows tutors to understand students’ progress thoroughly. Therefore, they could give constructive feedback (Atmodiwirjo & Yatmo, 2020) that is tailored for the individual needs of the students (Bachman & Bachman, 2009).

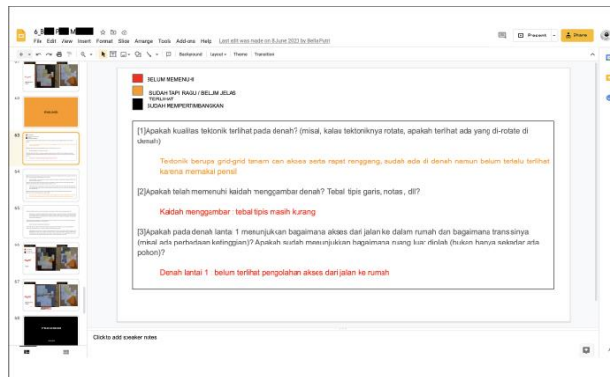


Figure 4. BPM’s written response towards the given feedbacks from her tutor.

Third, when it comes to giving feedback, we can see a pattern where the feedback is delivered by the tutors to LK, mostly right after the assessment process. Examples of feedbacks in the IAD2 studio can be seen in Figure 3. The feedback comes in any form, whether delivered verbally, through text, or even in markings. These feedbacks are delivered either synchronously or asynchronously during a Zoom session. As the feedback was received either as general feedback or tailored according to individual progress, they will significantly help the students construct “meaningful interaction with others and the sense of belonging” (Bachman & Bachman, 2009, p. 318). Moreover, giving tailored feedback that corresponds to an individual’s progress indicates how the tutor’s authority upon the studio directly affects the students’ autonomy. It helps “Fostering autonomy in the classroom thus increases students’ feeling of competence, interest and enjoyment as well as their overall motivation” (p. 318). Another indication of such a notion can be seen in Figure 4, where students were allowed to respond to questions and critiques thrown at them.

In Figure 4, the slides allow the student to think about the feedback before giving any response. Such an asynchronous form can rarely be seen in a physical studio environment. In Figure 2, we can see the reflective acts occur both in the studio and outside of the studio period. We can also see that the reflecting process

in the Google Slides includes visiting other students’ slide. Therefore, the student could have a better positioning towards her progress.

Overall, the mapping in Figure 2 shows that the tutors made sure of their authorities upon the studio progression through a maintained communication with the students that are delivered in various ways and for different purposes. The authority reflected through either a rather fixed time from the instructions at the beginning and the end of the studio session or somewhat flexible monitoring and feedback time depending on the studio’s situation and student’s progress. It is vital because feedback is a kind of formative assessment that aims for further development in students’ learning process; hence, flexibility to maneuver in various levels and towards various aspects is necessary (Atmodiwirjo & Yatmo, 2020). Interestingly, this process affects the extension of students’ autonomy in the studio: how they control their time to screen and select their works before presenting them to their tutors; reflect upon their works as well as their friends’ works; and the overall independence in finishing their projects. Such a notion is crucial because it provides meaningful learning for the students (Atmodiwirjo & Yatmo, 2020).

CONCLUSION

Studies have explored the opportunities and challenges following the execution of learning activities in a virtual architecture studio. While many aspects need to be considered for conducting a virtual studio, it is crucial to make sure that such a studio environment keeps the culture that has been seen in many physical studios (Andia, 2002). At the very least, an attempt to preserve studio culture means an attempt to maintain the balance between tutors’ authority on controlling the course of the studio and students’ autonomy on making position towards the learning process of designing.

The study presented in this paper has shown that balancing the authority and autonomy of a virtual studio does not require a high-end platform. However, it is notable that the platform should allow for flexibility in access and could role as an editable and accessible-by-anyone record machine. In the case presented in this paper, whereas the IAD2 studio uses several digital platforms, mainly being Google Slides, such platforms “permitted simultaneous and novel overlapping of learning and teaching” that is essential to students’ progression in the studio (Dann & Lambrou, 2020, p. 153). The features provided in those platforms make it possible for the tutor in providing the desired culture of a studio virtually. However, the study is still limited as it is only observing a record of a project in one studio. Several records will make this study more comprehensive and gives us a more in-depth understanding of virtual studio culture. Nonetheless, the

study shows potentials to further develop, especially for exploring the intrinsic process of designing in a virtual learning environment.

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