
Transformative Approaches to Studio Teaching: Enhancing Students' Skills through a Blended Environment

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Abstract

Studio teaching is prevalent in several engineering disciplines, such as architecture, civil, mechanical, and construction engineering. It thrives in fields where expert mentors must demonstrate skills and guide students through practical and developmental processes. Grounded in the concept of artistry, studio pedagogy emphasises a close mentor-mentee relationship involving an iterative process of planning, action, critique, and revision. Central to this process is the continuous gathering of feedback. However, in the current climate of large classes and evolving learning needs, the traditional studio model needs to be improved to effectively support students' learning. This paper presents a practical teaching practice developed over five years, where the studio model is reimagined through a combination of face-to-face tutorials, online activities, focused workshops, peer- to-peer discussions, and one-on-one consultations. This redesigned model leverages a blended environment, utilising online collaborative tools to facilitate feedback gathering at various points throughout the semester, thereby enhancing students' engagement with disciplinary knowledge. The blended approach fosters a close and focused mentorship, allowing students to experiment with their designs and skill applications in a supportive environment. Additionally, this method enables students to customise and self-pace their learning, significantly improving their educational experience. It addresses the increasing challenges of class attendance, particularly during critical points in the semester, by providing flexible and accessible learning opportunities. This paper demonstrates how a blended studio model can effectively enhance students' design skills and overall learning outcomes in engineering education.

Keywords: Studio Teaching, Blended Learning, Assessment Practice.

1. INTRODUCTION

I teach in the field of architecture, where the chief learning experience is the studio (Ardington & Drury, 2017); in this environment, pupils are mentored by experienced practitioners through an iterative process of idea development and critique. Feedback that the mentor provides guides the development of revised propositions, and the process continues until the mentor assesses that the outcome has reached a professional level. This process, known as *artistry* (Rutherford, 1987), is grounded in the millenary practices of crafts and guilds, where the pupil would choose their own mentor to acquire their knowledge and often adopt their style. The artistry process informing the architecture studio implies learners should work closely with one tutor, one experienced mentor (McClellan & Hourigan, 2013). Over time, however, the process of *artistry* in the context of current architectural education has been adapted to suit the constraints of university timeframes and assessment requirements. In this context, student work is critiqued and assessed by the student's tutor (Mewburn, 2012). The close relationship between student and mentor/tutor/assessor represents a power imbalance vested in the tutor as the expert provider of feedback and assessor of the student's work (Musa, 2020). While tutors are instrumental in providing feedback that develops student praxis, the power imbalance can condition students to apply feedback not because it is understood or valued, but because of perceived repercussions on their assessment outcomes.

The relationship between mentor and pupil makes the mentor privy to criteria related to the learning process (such as effort or enthusiasm) as well as those related to the learning outcome (an architectural design). While assessing, mentors may weigh some criteria more heavily than others, considering factors beyond those articulated in the course outline. The outcome of how artistry has been adapted to large classes today is that architecture students focus more on designing for their tutors than learning the basic principles of doing architecture. Cue-conscious or cue-seeking students then become sensitised to criteria of particular importance or hidden criteria likely to play a critical role in the judgements that inform their grades (Doheim & Yusof, 2020). As a result, students unconsciously become accustomed to pleasing their tutors because this will have a direct impact on their grades. This gives rise to problematic practices, behaviours and attitudes that limit student acquisition of the self-confidence and learning independence required for professional praxis; often, students do not process feedback or critique, simply following instructions to achieve better grades. I have observed these problematic power relationships at QUT over many years, with students often describing the issue in institutional surveys: *“Our first two years of study have been mainly orientated on promoting “creative” form. But here I ask, what exactly is creative form and why couldn’t my own tutors pinpoint exactly what it entailed or how to achieve it? I so often heard weak suggestions like “it needs a little more of this... [insert perfunctory hand gestures and facial expressions here], do you know what I mean?” That’s one of the reasons previous design studios irked me so much, they seemed more about mindless pursuits of form to appease my tutor’s visual taste than learning how people relate to space and how form can then accommodate people’s lifestyles.”* (QUT Students’ Anonymous Survey, 2016). Further complicating the matter, feedback from other sources, such as industry professionals, is not applied when perceived as extraneous to the assessment process.

However, in my experience, first as an architecture student at the Polytechnic of Milan and then as a teacher, I have learned to appreciate the importance of effective, diverse feedback as being essential to progress one’s self-development and judgement. My teaching is, therefore, strongly focused on the way feedback is provided, and assessment is structured to condition the student learning experience. Since 2001, I have taught architecture in a range of international contexts (Italy, Thailand, Malaysia, China, and Australia since 2010). During my teaching experience, I have developed an approach to practice that challenges the problematic student/mentor power relationship in architectural education. My teaching emphasises the importance of providing students with clear and meaningful guidance in the development of their design propositions (Ritter et al., 2015). I strongly believe it is paramount to expose students to different ideas and experts in the field; however, I also strive to empower students to develop their own ideas, their own vision, and their own approach to architecture by reinventing the close relationship between mentor and pupil (Knud, 2014). For the last ten years, I have experimented with my assessment practice in different units, courses, and national contexts to develop students’ confidence in their own judgements and to break the perfunctory dependency on a specific tutor’s approval.

My personal ethos is to provide students with a meaningful and transformative learning experience, as advocated by Grierson and Munro (2018). In the context of architectural education, this ethos had to reinterpret the idea of *artistry*. This approach has evolved over my time at QUT, during which I have successfully taught 3500+ students in the QUT Bachelor of Design (Honours), Master of Architecture, and Bachelor of Urban and Regional Planning (Honours). I have experienced large classes with more than 100 students and managed diverse cohorts in terms of disciplinary and cultural backgrounds, expectations, and age. For the last four years, I have been teaching at an advanced architectural studio (DAH710, renamed DAN111 in 2022), catering to an average of 120-140 students.

The success of my innovative assessment practices has been recognised in Australia and beyond through extremely high student satisfaction, positive feedback from the industry, awards for both my work and that of my students, invitations to share my work at other institutions and inclusion in a range of publications (Guaralda et al., 2015).

In designing the learning experience of my students and the assessment of their work, I have developed an approach that incorporates (a) student exposure to critique and feedback from multiple

expert sources and (b) removal of the formal assessor aspect of the mentor/tutor role through the appointment of anonymous, independent assessors. My assessment innovations, although relatively simple from some perspectives, also present complexities in the context of architectural education. They challenge established practices requiring students to work with different mentors at the same time in ways that develop independent judgement (Sadler, 2013).

2. CRITIQUE AND FEEDBACK FROM MULTIPLE EXPERT SOURCES

I structure students' learning experience around providing different types of feedback as a form of developmental assessment (Hounsell et al., 2008). Students receive feedback from multiple sources by working with the unit convenor and one or two practitioners; at key points in the semester, additional industry experts are invited to attend the studio and provide further input into the design process. During the semester, I also organize collaborative workshops where students can benefit from peer-to-peer learning. Drawing on transformative learning literature (Gravett, 2004), I designed activities that aim to empower students in processing feedback by taking full responsibility for their own design choices, going beyond appeasing a specific mentor. The feedback students receive from multiple sources can be varied and contrasting, forcing students to reflect on the critique they receive and decide on appropriate responses, as articulated by Carless and Boud (2018). This model enables students to play an active role in the feedback process by choosing if and how they incorporate it into their learning process rather than passively following the instructions of a single mentor.

In addition to providing in-class feedback and feedback from formal presentations, engagement with online tools and resources is one of the pillars of my teaching praxis (Bâldea et al., 2015). I take advantage of contemporary technology to offer additional guidance; I have implemented a virtual studio that allows students to post their work and receive specific feedback outside studio time. Since 2020, I have moved all student presentations online, using a platform that enables the mark-up of drawings in real-time and allows invited international guests to provide clear feedback to students when finalising their work. Students can also elect to attend a 20-minute online consultation with the unit coordinator to gather targeted feedback on specific aspects of their design; this session can be booked using an online platform that allows students to select the time that suits them the most.

Since 2019, I have also drawn on my networks to incorporate international feedback sources through the introduction of a charrette, an innovative, asynchronous online studio that requires my QUT students to develop design solutions quickly and efficiently in collaboration with peers from international universities (Indonesia, Poland, Colombia, and Thailand). This provides peer-to-peer mentoring as well as feedback from international colleagues participating in this project (McClellan & Hourigan, 2013). The unique format of the international collaborative charrette was presented at the 2022 World Urban Forum and was well received by industry and international colleagues alike.

After implementing these innovations, I saw considerable evidence of impact on student success and experience. In the teaching periods Semester 1 2021 and 2022, for example, my QUT Student Voice Survey (SVS) ratings were high across all items (blue), and consistently higher than the average for my school (orange) (Fig. 1). Of particular interest is the performance of those SVS items most relevant to my assessment innovations. A high proportion (97-100%) of my students consistently agree or strongly agree with the following questions:

- (U2) Overall, I am satisfied with my learning in this unit;
- (U3) This unit provided opportunities to engage with other students online or face-to-face;
- (U4) I received useful feedback;
- (U5) This unit provided opportunities to develop skills and knowledge I need in my career;
- (T2) Overall, [Educator Name]'s approach to teaching supported my learning

In addition, student failure rates have reduced from 13.8% in 2019 to 0.8% in 2021 and then to 0% in 2022. Student achievement also improved: for example, the proportion of High Distinctions (7) rose from 23% in 2019 to 35% in 2022, during which time students were assigned the same or comparable assessment briefs and assessment judgements applied the same standards as before.

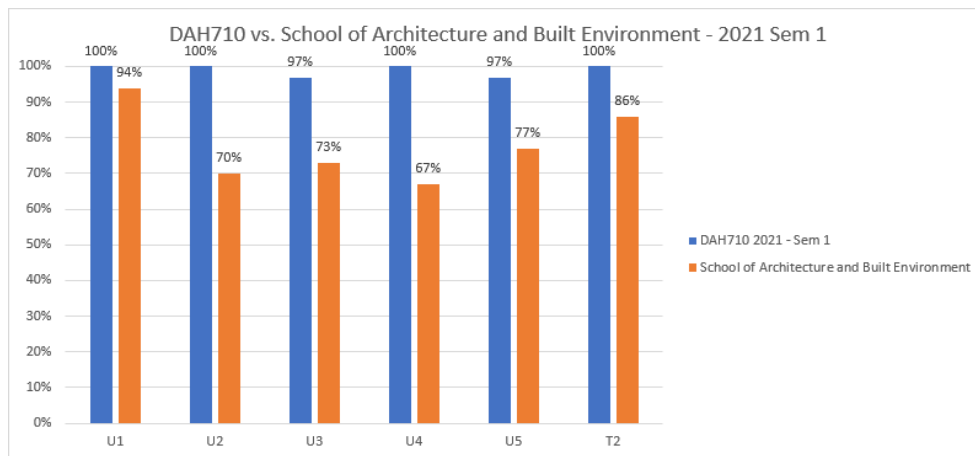


Figure 1. Comparative student agree ratings for studio unit DAH710

3. APPOINTMENT OF ANONYMOUS, INDEPENDENT ASSESSORS

When I initially applied my multiple-feedback approach to a design studio, after having first tested in more theoretical units, the main issue raised was the perceived power imbalance remaining between students and tutors. Students understood the value of diverse feedback but were still pragmatic about their assessment:

“Whilst I understand different tutors may have different opinions of our work and this is ok [...], this makes me think that whoever is marking my work will think that I have not followed their recommendations and listened to advice to better my mark” (QUT Students’ anonymous survey, 2019).

It became evident that students wanted the assurance that the tutor providing feedback was also marking their assessment so they would know how to shape their assessment pieces. I responded by separating the assessor role from the tutor/mentor role by appointing a single assessor for all students in my studio. This independent assessor does not take part in any other semester activity; their identity is not revealed to students. The brief to students is that their work must meet industry standards and must speak for itself. Students cannot rely on the rapport they built with their tutors; they must focus on the quality of their design and ensure they fully document and fully detail their concepts for an unknown assessor.

“External marking is a great idea, and I don’t see any negatives in this regard, I believe it to be fair and prompt and allows the coordinator and tutors to focus on continued teaching” (QUT Students’ anonymous survey, 2021).

Separating the assessment process from the artistry approach to studio has broken the power imbalance, changed student attitudes towards their tutors and allowed students to exercise greater control over their learning (Musa, 2020). Making the assessor an independent figure, means students now value any feedback and are more open to meet industry standards, because they know their assessor is a practitioner who follows and understand these standards.

As QUT has adopted a criteria and standards performance-based policy approach to assessment, in appointing an external independent assessor, I needed to ensure consistent assessment judgements through the development of clear criteria, standards and ongoing moderation processes. I approached this by adopting an online platform that allowed continuous communication between the assessor and unit convenor. This enabled me to moderate judgements by monitoring the assessment process and by providing feedback to the assessor in terms of the standards they were applying. This process provides the assessor with clear direction in their work, and that enables them to calibrate standards and refine

their judgement.

4. CONCLUSION

My approach to studio teaching and assessment practices has academic received recognition internationally. I have been invited to run intensive design studios engaging undergraduate students in China and Malaysia. I was also invited to spend four months in Thailand teaching urban design and training local colleagues in studio teaching. The positive impact of my approach on student learning has also been recognized by industry guests, publications, and awards. Local and international members of the architecture community who have attended final studio presentations at QUT have shared very positive feedback about the quality of the students' work after seeing them present. Some of my students' work was also featured in industry publications such as *The Agenda* (the Planning Institute of Australia magazine for Queensland and Northern Territory) and the *Journal of Public Space*. My students have also won significant awards such as the Logan City Council Urban Design Award in 2017 and 2019 in the student category, for the redesign of Woodridge Railway Station and surrounding areas, and the C40 Students Reinventing Cities Competition in 2021.

My implementation of diverse feedback, relying on the adoption of a blended environment from different experts in different formats, has enriched students' learning by enabling them to develop original critical thinking skills that are required of practitioners in the real world. Breaking the traditional power relationship between students and tutors, especially in the context of the architecture studio, has proven a simple yet effective way to empower students in their learning, moving the focus of their interaction with their mentor from merely responding to feedback to critically assessing every input received to develop one own's response to critique. Positive student experience and learning are evidenced by high student satisfaction ratings and industry recognition of my students' work. I am constantly developing my teaching practice.

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