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“Conversation Leading to Progress”: Student Perceptions of Peer Tutors’ Contribution to Enhancing Creativity and Collaboration in a First Year Design Studio

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Cover Page Footnote

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Lisa Zamberlan and Stephanie Wilson

ABSTRACT

This paper reports on an action research project involving the redesign, implementation and evaluation of a peer tutor program in a first year design studio in higher education. The effectiveness of the revised program, particularly its capacity to support learning for commencing students in the environment of a creative studio, is examined through focus groups with first year students and third year peer tutors. The study suggests that peer tutors play a pivotal role in the studio that is different from, but complementary to, the role of the studio tutor. When employed purposefully, peer tutors can make a significant contribution to the development of a positive studio culture and the enhancement of a collaborative community of practice, and amplify students’ engagement with iterative processes of design learning. Results are discussed in relation to current theories about what constitutes a successful peer tutor program, growing evidence of the unique role played by peer tutors in design and other practice-based disciplines, and the potential contribution of peer tutors to the development of creative skills valued in 21st century design practice.

INTRODUCTION

This research initiative in the Bachelor of Interior Architecture (BIA) program at The University of New South Wales supported a strategic refocus on developing a community of creative practice in the degree program, as well as supporting the transition of first year students into a culture of collaborative learning. The authors recognised the opportunity to support this strategic direction through peer learning by engaging senior students who were considered a rich and “untapped” resource in the development of the discipline community.

Zamberlan and Wilson (2015) reported on the redesign of a peer tutor program for first year design students. The present study represents the subsequent phase of the action research cycle by examining the impact of the revised program on student learning and experience. The authors were interested in the extent to which the revised program helped commencing students to flourish in the creative design studio environment. Creative agility and the capacity to contribute to a variety of creative practices are factors that

are emerging as central to contemporary interdisciplinary design practices where processes such as collaboration and co-creation are paramount (Wilson & Zamberlan, 2015).

In creative disciplines, the first semester of the first year of study has been identified as a crucial time to establish “competencies related to work sharing, critique and collaboration” (Araújo et al., 2014, p. 30). Kift’s (2009) First Year Curriculum Principles suggest, “learning communities should be promoted through the embedding in the first year curriculum of active and interactive learning opportunities and other opportunities for peer-to-peer collaboration and teacher-student interaction” (p. 41). Opportunities for first year students to work with other students collaboratively can be seen as embedded cohort-building activities, and support the notion that students’ orientation to university is a “process not an event” (Kift, 2008, p. 14).

Establishing confidence in the processes of research, thinking through making, critique, reflection, and collaboration is considered critical to success in the creative fields. In a study at Oxford Brookes University, Price and Rust (1995) noted that students who received supplemental instruction from peers, which involved the sharing of ideas and approaches, became more confident in a range of areas, such as approaching coursework, presenting the coursework, taking part in seminars and answering questions, oral skills, and working with people. Research suggests that peer tutors benefit in a variety of ways as well. For example, Topping (2005) identifies benefits for peer tutors such as the ability to critically analyse the work of peers, enhanced leadership and interpersonal skills, and importantly, an enriched understanding of the process of learning in the discipline. A study at Curtin University of 858 mentors participating in a range of peer mentoring programs across the institution revealed benefits for mentors that fell into four major categories, including altruistic, cognitive, social, and personal growth (Beltman & Schaeben, 2012).

Smith and Hatton (as cited by Boud, Cohen, & Sampson, 2002) provide evidence that “fostering critical reflection and reassessment of views more readily comes from interchange between peers than even from well-planned discussion sessions with teachers” (p. 8). This suggests that creating an environment that helps facilitate a high degree of peer interaction, rather than one where the emphasis is primarily on the “expert view,” has the potential to positively impact student learning. It is possible that the effective introduction of peer tutors into the design studio may increase the amount and variety of feedback students receive on their work. This study examines these and other benefits associated with introducing peer tutors into the design studio, where confidence in the sharing of ideas is critical to the learning environment.

THE PREVIOUS PEER LEARNING PROGRAM

The previous BIA peer learning program, run in 2014, was conducted over five weeks of the first semester of the first year design studio. In this program, senior students volunteered as peer mentors rather than being formally contracted as peer tutors. Mentors were selected via expression of interest and according to their weighted average mark and evidence of extra-curricular participation in university activities. A briefing meeting was conducted by the studio convenor outlining the protocols expected, the

extent of the contribution and the tasks first year students would be engaged in. One mentor was selected for each first year studio group, providing one studio tutor and one mentor for 15 first year students. In the first year design studio environment the peer mentor was available to students for assistance on research, idea development, or communication techniques. Mentors were also required to complete a page of “top tips” for success to assist first year students in the design studio, participate in all briefing meetings, and attend three first year studios. Mentors’ participation was included in a statement on the degree qualification certificate.

THE REVISED PEER TUTOR PROGRAM

Two focus groups were conducted after the 2014 iteration of the peer mentor program (reported in Zamberlan & Wilson, 2015). The data provided a strong foundation for the redevelopment of the program. The analysis of focus group data from peer mentors revealed five key suggested areas for improvement. These included extending the mentor training, further clarifying the role of mentors, building more structure into the program, enhancing the collaboration between tutors and mentors, and improving the provision of feedback to mentors on their performance.

The focus group with first year students identified four key ways in which the program could be improved. These included further clarification of the role of the mentors and how to approach them, aligning mentor support with the phases of a studio project, using mentors to help model the design process, and having mentors run additional workshops within studio based on their particular strengths as well as specific challenges faced by first year students.

In response to these focus groups, the revised peer tutor program aimed to enhance the sense of community and opportunities for creative collaboration in the design studio. A significant change was the shift to formal contracts for peer tutors. Five third-year students were formally contracted as peer tutors for seven weeks of the 12-week design studio. Emphasis was placed on expanding the role of peer tutors to enable them to be more involved in the direction of the studio and the shaping of the studio culture. The peer tutors’ role was to assist studio staff in the development of students’ design process skills and visual communication techniques.

Engaging peer tutors in this way was beneficial for various reasons. Formal employment provided support for senior students in an increasingly expensive learning environment, clarified their role, and explicitly acknowledged their leadership potential. Succession planning and building stronger relations with the student body as future industry leaders was an important factor in the redesign of the peer tutor program, as was strengthening the creative community involving academia, industry, and the student group within a practice-based learning environment. It was important for the BIA program to engage peer tutors in the design studio itself. A complementary faculty-wide peer mentor program provided additional support for students’ social transition to university.

The hiring of peer tutors was based on expressions of interest, academic achievement in design studio, and excellent communication skills. A two-hour workshop conducted by the studio leader introduced peer tutors to the

intention of the studio, which was to foster a collaborative environment reflective of industry practice. Peer tutors were encouraged to discuss their own experiences in the first year studio environment and reflect on effective techniques to enhance learning, student engagement, and feedback. The workshop was followed by a meeting with all studio staff to clarify the various support roles within the studio. The academic studio leader engaged a team of studio staff comprised of eight studio tutors (graduates and design industry practitioners) and five peer tutors (senior students). The studio tutors each had a tutorial group of 15 students while the leader and peer tutors offered support across groups in the larger studio cohort. Peer tutors attended weekly studio staff meetings both prior to and following the studio to discuss progress and assist in redirection of support as required.

In a common studio space, peer tutors created “satellite” workstations among the eight studio groups. In the studio, the peer tutors’ role was to work on the design studio projects within scheduled class time, concurrently with the first year cohort. By modelling the design process in real time, peer tutors were able to demonstrate approaches to commencing a project, research development, experimentation, critique and the development of ideas, and other skills associated with completing a proposal for submission. Importantly for the first year cohort, and in direct response to the early focus group data, peer tutors were also able to assist in the development of various communication techniques involved in developing a design studio proposal, including concept hand drawn sketches, models, renderings, and portfolio development. In the scheduled class time, first year students accessed the studio tutor for more formalised feedback, and peer tutors dedicated their time supporting research through design and skill development.

METHODOLOGY

Focus groups were conducted to gather evidence about students’ experience of the revised program. The first focus group involved first year students who interacted with the peer tutors during the first semester of 2015, and the second involved the peer tutors who took part.

All first year students (116 in total) who participated in the studio and had access to the peer tutors were invited to take part in the first year focus group. Eight first year students responded to the invitation (self-selected). Parker and Tritter (2006) highlight the importance of group selection in relation to the form and quality of interaction in focus groups, suggesting that students who know each other will likely generate better levels of interaction. The students in this group were familiar with each other and had interacted frequently during the semester under discussion. All five of the peer tutors who participated in the program took part in the peer tutor focus group. Before fulfilling the role they had not had prior tutoring experience, so were sharing their perspectives on the experience of tutoring in the design studio for the first time.

The focus group methodology allowed the researchers to draw on respondents’ attitudes, beliefs, experiences, and reactions in a way that would not have been possible using other methods (e.g., one-to-one interviews or surveys). Focus groups ran for one hour each and were facilitated by one of the authors. The facilitator was external to the course teaching team and unfamiliar to the students who took part. Open-ended

questions were used to generate in-depth discussion among the participants and create momentum to allow “underlying opinions, meanings, feelings, attitudes and beliefs to emerge alongside descriptions of individual experiences” (Parker and Tritter, 2006, p. 26).

Focus groups began by asking participants to discuss how they experienced being a first year student or peer tutor in the program. Focus groups contained a high degree of “synergy, snowballing, stimulation, and spontaneity” through the discussion (Catterall & Maclaran as cited in Williams & Katz, 2001, p. 3), adding to the richness of the data. On many occasions a comment made by one participant led to a train of thought in another, and participants developed new ideas “and ways of connecting their personal stories to specific situations” (p. 3). The fact that participants generally dictated the flow and direction of questioning lends weight to the quality of data obtained. However, the sample size of the first year focus group was small in relation to the cohort as a whole. For this reason, other data sources were examined to increase validity and assess the generalisability of the data. Member checking was conducted during the focus groups by the facilitator to help improve the accuracy of the study. This involved the facilitator restating and summarizing the views expressed by the students to increase precision. Ethics approval for this research was obtained from The Human Research Ethics Advisory Panel under authority of the Human Research Ethics Committee of The University of New South Wales.

The analysis of the focus group data involved an examination of the substantive content of discussion, as well as the *interaction* between participants. Data were coded using the constant comparative method. Each focus group was transcribed, and the data was analysed by drawing out particular themes and sub-themes and coding participants’ comments against these themes to look for “core insights, common phrases and words, a specific mood or tone to group interaction, and other non-verbal cues” (notated during the focus group) (Williams & Katz, 2001, p. 7).

As suggested, the small sample size associated with the first year student focus group is a potential limitation of the study. The eight students who took part in the first year focus group may have been more willing to volunteer because they responded positively to the involvement of peer tutors in studio. There may also have been a tendency for students who self-selected for the focus group to be high achieving students who responded well to the learning environment generally, or who had favorable views toward the peer tutors. As the sampling procedure in this study resembles nonprobability sampling, it was necessary to consider the selection effect and further test the validity of the focus group data through the collection and analysis of additional information from the cohort. This included both qualitative and quantitative data from the University’s Course and Teaching Evaluation and Improvement (CATEI) survey. The additional data were used to consider the extent to which the focus group data could be generalised to the broader cohort.

RESULTS

The following results focus primarily on the findings of the first year focus group, as a detailed analysis of both focus groups is beyond the scope of this paper. However, some of the findings of the peer tutor focus group have been

included below at relevant points to demonstrate the dovetailing of emergent themes between the two groups.

The first year focus group provided student perspectives on the contribution of peer tutors and their impact on learning and the overall student experience in design studio. A number of criteria were used to prioritise the importance of themes that emerged from the first year student focus group, including:

1. the frequency of comments (frequency)
2. the number of different people who mentioned the comment (extensiveness)
3. the passion or force behind the comment (emotion)
4. the level of detail provided (specificity)
5. the consistency of the views expressed by individuals (internal consistency)
6. whether participants themselves described a particular aspect of their experience as important (perception of importance) (Krueger & Casey, 2015, p. 147)

Following the coding of data, the two researchers independently reviewed the focus group recordings a second time (with the assistance of the transcriptions) and analysed each theme and sub-theme in relation to the six criteria above. Frequency tallies were used to capture and assess the prominence of each theme (for criteria 1, 2, 3, and 6) and written descriptions were used to note details about specificity and internal consistency (criteria 4 and 5) in relation to each coded theme. The passion and force behind a comment (criteria 3) was assessed by factors including vocal tone, volume, and the use of language connected to emotion. Independent analyses were then compared, revealing consistencies in the “weighting” of themes and sub-themes. Any inconsistencies were discussed and final tallies (in relation to the frequency data) agreed upon.

Key overarching themes (and number of associated comments) that emerged from the first year focus group data include:

1. Collaboration (n=35)
2. Accessibility (n=33)
3. Design Learning (combined number = 33)
 - a) design process (n=13)
 - b) creative process (n=11)
 - c) productivity (n=9)
4. Support (n=18)

The sub-themes contributing to each overarching theme are discussed in detail below.

Collaboration

The role that peer tutors played in relation to enhancing collaboration in the studio emerged strongly from the focus group data. There were more comments relating to the theme of collaboration than any other. Within the context of this analysis, collaboration is defined as various combinations of students and peer tutors actively working together to discuss ideas, provide feedback, and collectively solve problems to support learning and encourage

progress. The sub-themes that comments clustered around in relation to collaboration included (in order of prominence):

- Physical space conducive to interaction and collaboration
- Conversations with peer tutors conducive to collaboration (non-judgemental)
- Relationship between collaborative opportunities and the progression of design ideas
- Democratic experience of working in collaborative teams
- Connection between people through collaboration
- Mirroring of collaborative processes in the workplace
- Importance of consistency in feedback within collaborative teams

First year students referred to the nature and use of the physical space many times during the focus group (19 separate comments). They emphasised the benefits of the open nature of the physical studio in relation to collaboration, which allowed the whole cohort (116 students) to not only work together in smaller groups but to access a diversity of groups and individuals within the space at any time. First year students linked the quality of their learning experience to the spatial qualities of the studio and the circulation of peer tutors within this learning environment. This was seen as lending itself to enhanced collaboration with one or more peer tutors and other students. Students' comments suggested that the movement around the space mirrored the fluidity of ideas and emphasis on process development that were an integral part of their studio curriculum. By way of contrast, students described experiences of spatial configurations in other courses (not involving large open spaces and opportunities for collaboration with peer tutors and other students) as being "stunted":

... it's an open plan room, where all the tutor groups are all together
 ... I would spend an hour or so just sitting with someone else in another group because you just could, and I'd have two [peer tutors] helping me with something for half an hour. It was so much more collaborative. For me personally it was so daunting starting this course, and that just made it so much easier. Because it's a creative course you're so much more uncertain about your own inspiration and your creative ability, but having the [peer tutors] and being able to bounce ideas off each other as students helped so much.

First year students made numerous comments linking the vibrant dialogue and collaboration in studio with the fact that they didn't feel "judged" by the peer tutors: "I think they have a different approach... the tutors and the lecturers are there to assess you and grade you whilst the [peer tutors] are actually there to kind of help you out and bounce ideas." Students' comments suggested that this perceived difference in the role of peer tutors in the studio helped them to voice their deliberations with relative ease, something they felt less comfortable doing with studio tutors who are responsible for assessment. These comments were echoed in the focus group with peer tutors who noted that "peer tutors were not marking the work so conversations were different [to those with studio tutors]; more about bouncing ideas around, more casual."

In describing their interactions with peer tutors, first year students found

significant value in conversations "leading to progress." This is considered a key finding of the study because it directly links the dialogic aspects of collaboration with students' perception of their progress. Students made connections between opportunities for conversation and collaboration and the subsequent progression of their ideas:

The two main developmental stages of my project, what I think were major turning points and kind of revelations ... came about from conversations with the [peer tutors] ... it was completely invaluable.

Students commented on the democratic nature of the collaborations in studio, noting that they were all contributing to each other's projects. One student noted, "It was like a group of us all working on each of our projects."

Everyone was just talking about it and no one [said] 'my opinion is greater than yours.' I think the [peer tutors] help with that because they were like the halfway point.

Student comments suggested that the collaborative nature of the studio fostered a sense of connection among peers and a sense of a creative and collaborative culture, with one student noting, "So it's really fostering and establishing the kind of connection which ideally we want to get to in a couple of years' time." Students recognised the value of the peer tutors in the sense that they helped to simulate a collaborative environment that resembled what they might experience in the workplace:

I think for our future as well, we're not going to be working by ourselves, we will be working in teams ... with the [peer tutors] you already start learning how to work as teams and take criticism and [learn] how to build an idea

Although the majority of comments made by students in reference to collaboration suggested a positive impact on student learning and experience, two students referred to having experienced some inconsistencies between the feedback they received from their studio tutor and one of the peer tutors. One student commented, "The [peer tutor] completely contradicted the tutor; that was confusing." This reinforces the importance of regular communication among studio staff. In the focus group with peer tutors, participants acknowledged the importance of their connectedness with the studio staff, describing it as a "unique relationship" where peer tutors have a different role to studio staff but still need to be "on the same page" to avoid mixed messages.

A critical shift in the peer tutor role occurred in the fourth week of the program. The satellite workstations, which situated peer tutors in one place for the first three weeks, naturally dissolved as they became confident in engaging more directly with the student cohort. The static workstations, from which the peer tutors demonstrated studio tasks, were seen by peer tutors as limiting the support they could provide. Peer tutors began working more closely with various first year groups and roaming the studio using an "outreach" approach to learning support. This shift was an unexpected and welcome change as the studio progressed. For the peer tutors, the evolution of the role, from satellite workstations to free range support, significantly leveraged their impact: "It's not about replicating what someone tells you to

do its about using that as a trigger to inspire you in some other way... that's when the role between demonstrator and tutor started blurring, which was better because you could build relationships with students and it was an ongoing relationship ... we gained momentum in that way, it felt like an ongoing conversation”

Many of the student comments related to collaboration overlap with the theme of accessibility discussed below; that is, the level of access students had to peer tutors during studio time increased opportunities for collaborative activity among groups of students and peer tutors.

Accessibility

The theme of accessibility came through strongly in the first year student focus group data. It was the second most prominent theme overall. In this context, accessibility relates to both the *amount of time* students were able to spend with peer tutors, leading to a significant increase in opportunities for dialogue and feedback, as well as the perceived *approachability* of the peer tutors. Sub-themes in relation to accessibility included:

- Consistency of access
- Formal role of the peer tutors
- Closeness in age/experience of the peer tutors
- Ways of communicating that students' related to

The accessibility of tutors as they moved around the room was discussed in the focus group as very important, particularly in relation to the progression of ideas, as there was “always someone to talk to” and they “don't have limited time.” One student commented, “So you basically had your tutor plus six people to talk to, whereas [in other courses] we only have one.” Students' comments on the impact of the accessibility of the peer tutors were reinforced by the number of comments comparing this studio with other learning experiences where peer tutors weren't present (18 separate comments). There was a perception that you could talk to the peer tutors “for however long you wanted,” and students contrasted this with the more formal feedback provided by studio staff within a limited time frame.

First year students recognised that peer tutors had a “formal” role within the studio and felt this resulted in them not being distracted by their own studio work: “They were there just for us.” They acknowledged that peer tutors were paid for their role and connected this with the level of engagement of peer tutors and the “contribution” they made.

Students' attributed the level and ease of dialogue with peer tutors to closeness in age and/or experience. There was a perception that peer tutors acted as mediators between staff and students. Peer tutors were seen to be more accessible not only in terms of “impromptu” availability but in the way they demonstrated understanding of the student experience: “they're in it, so they kind of know,” and it “doesn't really feel as intimidating.” They referred to a “blurring of the boundaries” that was more “student-student than student-teacher.” First year students also noted that peer tutors used a language they could relate to, commenting that they “were much easier to understand” in the way they explained things (noting that they didn't always “get” the studio staff).

Closely related to the theme of accessibility was the theme of support (detailed later in this section). That is, the accessibility of peer tutors in turn increased first year students’ sense of being supported both personally and in their work.

Design learning

The third broad area, which emerged as prominently as accessibility, was design learning. This area was determined by a specific set of themes—creative process, design process, and productivity. As these themes are distinct but closely interrelated, they have been grouped under the broad heading of design learning. Comments related to factors such as inspiration, risk-taking, and creative culture were grouped under the theme *creative process*. Comments related to modelling an approach to design, learning the language of design, and helping students think like a designer, were clustered under the theme *design process*. Student remarks suggesting a relationship between the presence of peer tutors and students’ productivity, such as comments about the acceleration of ideas, practical assistance, and support for technical skills leading to progress, were grouped together under the theme *productivity*.

(a) Creative process

First year students frequently referred to the relationship between their interactions with peer tutors, their engagement with creative processes, and their levels of creativity. Students noted that the diverse perspectives and feedback from peer tutors gave them a multiplicity of ideas to “pick and choose” from, with one student remarking they could pursue creative ideas that “spoke to [them] most.” Students made several comments suggesting that the peer tutors supported them in the process of taking risks: “[Peer tutors] made us feel more comfortable in doing that.” By contrast, students referred to learning experiences outside the studio where “there was no room to make any mistakes,” which resulted in having “to produce something safe.” On a number of occasions students described what they perceived as a deliberate attempt by the design studio leader to set a tone of creativity from the outset of the studio and recognised the role of peer tutors as part of that intention. Students’ comments that they felt part of a creative culture were mirrored in the peer tutor focus group, with one peer tutor noting that they had “helped introduce students to what it means to be part of creative culture.”

Students connected their interactions with peer tutors in studio to feeling inspired. One student commented: “I found that I got much more inspiration from the peer tutors.” Their comments suggested that peer tutors helped them to feel part of a creative culture and appreciated that peer tutors didn’t “have that fear of criticism,” something they recognised that was important to overcome as part of the creative process. A further sub-theme related to the creative process was the role peer tutors played in easing uncertainty and building creative confidence. This was assisted by the regularity with which students could bounce ideas off peer tutors and each other. Notions of fluidity also surfaced in relation to creativity. First year students noted the relationship between the fluidity of ideas, assisted by regular interaction with the peer tutors, and their engagement in creative processes.

In the peer tutor focus group, senior students reflected on their role in

helping students alleviate blocks to creativity to enable progress. Peer tutors noticed that when first year students witnessed the sense of joy they (the peer tutors) derived from the creative process, it prompted a shift in the perception of the iterative process by first year students. They noted: “[Students] kept putting themselves down for the lesser things they were creating and we were finding opportunities in those, and the fact that it’s a process and there’s beauty in that.”

(b) Design process

Key sub-themes from the first year focus group data related to aspects of the design process included modelling an approach to design, learning the language of design, and helping students think like a designer. Students referred most frequently to the benefits of having peer tutors model particular aspects of design thinking and making. For example, students referred to the positive impact (on both their learning and confidence) of being able to see how peer tutors used particular materials, “watching their thinking” and decision-making. One student noted how the peer tutors helped them to start thinking like a designer: “This is what I need to mould my way of thinking”

Students noted how useful it was to observe peer tutors interacting with each other and with students, and commented that they found themselves reflecting similar patterns of communication. This related closely to students’ comments about how peer tutors helped introduce them to a “language of design” that they felt they started to develop through the studio, learning from “how they would actually talk about what they’ve just made” This initiation into the language of design resulted from “hear[ing] these guys chat about it and talk about it in that way.” Students felt that there was an expectation from studio tutors that they should already know how to talk about the design process in certain ways and suggested that the peer tutors helped them to bridge that language gap so they could communicate with studio tutors more effectively about their designs. These comments were reflected strongly in the peer tutor focus group. Peer tutors discussed their role in initiating first year students into the language of design through conversation and collaboration and the impact of these conversations in helping to build a studio culture: “You pick up how to speak about your work; you pick up everything from a conversation, and it’s not something you pick up from a [studio] tutor so much”; “sometimes we end up in groups where maybe me and [another peer tutor] are talking to three students at the same time, and it’s the dialogue we have with them, but also with each other...it creates that studio culture...I find that now for my own studio, it’s those conversations, beyond the ones I have with my tutor, the ones I have with my peers are almost the most important in studio for me.”

(c) Productivity

First year students made connections between their level of productivity and their interactions with peer tutors in the studio. Key sub-themes included the practical assistance they received from peer tutors to assist their productivity (such as advice on how to source materials and where to get printing done), the acceleration of ideas through interaction with the peer tutors, and the support they received in developing technical skills that they felt helped them progress their projects (e.g., using Photoshop and skills associated with using certain materials). One tutor mentioned they felt more constructive

with the peer tutors present: “[They] made us want to work on it more and improve it.” Students frequently commented on how the generation of ideas, which was accelerated through their interaction with peers, helped to open up alternatives when they felt they had reached a “dead end.” The peer tutors, in their focus group, commented that supporting the first year group when they felt “stuck” was an important part of their role in the studio: “It was a lot of relief when we could tell them that it happens, it happens a lot, it still happens.”

Support

First year students acknowledged the supportive role of the peer tutors. Sub-themes related to support included:

- Peer tutors were proud of students’ work
- Students felt understood
- Peer tutors wanted students to succeed
- Students could find a peer tutor they resonated with

The majority of comments related to a perception by first year students that peer tutors were proud of their work, and this was linked to students feeling motivated: They “just seemed to be proud of whatever we were creating” and “I was excited to bring my work in every week.” There is some overlap here with one of the sub-themes associated with collaboration, where students felt that the experience with peer tutors was “developmental not judgemental.” One student noted that the peer tutors “understand our feelings, what we are experiencing.” They appreciated the fact that peer tutors could recall their own experience of being in first year and share their feelings and experiences about the learning process.

The first year students perceived peer tutors to be authentic in their support and as wanting to see them flourish: “These guys want you to succeed.” Although the level of feedback students received was often discussed in the context of collaboration, creativity, and the design process, it was also seen as a form of support for students. One student commented that the advantage of having five peer tutors in the studio space was that students could find at least one peer tutor that they really resonated with: Different students “clicked” with different tutors. This resulted in what students described as a personal connection, which they perceived as supporting their learning and experience in the studio.

Generalisability of findings

Two further data sources were analysed to assess the generalisability of the first year focus group findings. This included both quantitative and qualitative data from the broader first year studio cohort based on the University’s Course and Teaching Evaluation and Improvement (CATEI) survey.

Quantitative data

At the completion of the semester, students who participated in the studio were asked to rate their overall satisfaction of the peer tutors. Table 2 summarises means for six relevant items from the CATEI survey. Respondents rated each item on a 6-point rating scale (1 = strongly disagree; 6 = strongly agree).

Table 1
First year students' ratings of peer tutors from the Course and Teaching Evaluation and Improvement (CATEI) survey: range of mean scores

Survey item	Range of means
Overall satisfaction	4.2 – 6.0
Encouraged cooperative learning	4.0 – 6.0
Provided feedback to help me learn	4.2 – 6.0
Improved my understanding of design / problem solving	4.4 – 5.6
Gave appropriate time and attention	4.3 – 5.8
Responded constructively to my ideas	4.4 – 6.0

Figures indicate that the broader first year cohort agrees that peer tutors were effective in relation to the six items listed (means of 4 or above indicate agreement). Three peer tutors received particularly positive mean scores (with one tutor receiving mean scores for these items ranging from 5.8 to 6.0). While response rates were relatively low for two of the peer tutors (with a range in response rates from 20% to 100%), mean scores provide some indication that students in the broader cohort viewed peer tutors favourably in areas that resonate with the four overarching themes that emerged from the first year focus group.

Qualitative comments

An analysis of first year students' qualitative comments from the Course and Teaching Evaluation and Improvement (CATEI) survey were also used to consider the extent to which the focus group data are representative of the views of the broader first year studio cohort. The 37 student comments about the "best features of the tutor's teaching" were grouped according to themes, revealing a high degree of overlap with the four key themes that emerged from the first year student focus group. In particular, the data reinforced the finding that students perceived peer tutors to be effective in:

- providing support and encouragement
- supporting collaborative and creative processes in studio
- contributing to students' learning of the design process
- contributing to students' productivity and quality of work

Students were also asked to respond to the prompt: "The facilitator's/tutor's teaching in this course could be improved by" There were 10 suggestions for improvement that called for clearer and more constructive feedback as well as *more*: access to peer tutors, guidance about options for materials, detailed responses, and encouragement. Although both the focus group findings and CATEI data indicate many positive perceptions in these same areas, students' comments indicate that the experience was not comparable for all students. This may be linked to the variation in mean scores received by peer tutors for associated items in Table 2: "encouraged cooperative learning," "provided feedback to help me learn," and "gave appropriate time and attention." Further revisions to the program would need to consider how to further support the development of peer tutors in these key areas to improve effectiveness. One student recommended the allocation of one peer tutor per tutorial group "because their knowledge is invaluable." Students'

suggestions for additional access to peer tutors, and the allocation of one peer tutor per tutorial group, may reflect the perceived value of the program and desire for increased support of this kind.

DISCUSSION

Goodlad's (1999) criteria for designing and implementing peer-tutoring schemes groups the characteristics of a successful program into three areas: successful role definition and training, clarity of tasks and program logistics, and support with evaluation. The key distinction between the revised program and the previous peer mentor program in the BIA relates to Goodlad's emphasis on a clearly supported and structured peer tutor program. The provision of a training workshop and the inclusion of peer tutors as key collaborators in all studio staff meetings and communication were considered to be critical components in the success of the program.

Focus group data suggest that the peer tutors enhanced first year students' learning and experience in a range of ways. It is important, however, to highlight the challenges associated with an embedded peer tutor program in design studio. For example, in addition to the financial commitment required from the BIA program, the studio leader invested a significant amount of time in developing the peer tutors as part of the staff team through training and with continual engagement, communication, and feedback throughout the semester. Though a critical factor in the success of the peer tutor program, this level of engagement added considerably to the workload associated with managing the course. The staff cohort expanded from eight to 13 in this instance and the subsequent challenges with managing and mentoring this number of staff must be considered when planning for future programs. Challenges included managing the different roles and expectations of staff, creating an inclusive culture among the staff group, leading and maintaining the pedagogical message of the program, and engaging first year students in the different levels of support available. Without this degree of engagement and proactive management from the academic leader, the program runs the risk of being less effective for all who participate.

Trummer and Lleras (2012) have recently argued that, with increasing social, cultural, and economic complexities in the professional domain, designers are being compelled to engage in "disruptive, sustainable, and differentiated solutions Within this context, the role of the designer is expanding - designers have to solve problems within more dynamic systems that involve a multitude of stakeholders and a high degree of complexity" (pp. 16-17). Increasingly, this means that designers are working in novel collaborative and multidisciplinary practices that synthesise commercial enterprise and creativity in the search for solutions to complex global issues. Skills in collective creativity within multidisciplinary teams are key to the success of these innovative practices. To support graduate preparedness for success in this changing world of work, Young (2012), argues that educators have to understand that the traditional focus of design on artisan practices can no longer be the only offering in design education. He emphasises that one of the key challenges for design education is addressing the relationship between design and other disciplines since it is now imperative to acknowledge that increasingly graduates will be "co-producing interconnected products, services and systems for tomorrow." Design graduates in the 21st century require a new range of employability skills

related to “collective creativity” as practiced in these emergent multidisciplinary professional environments (Bridgstock, 2013).

This emerging conceptualisation challenges many established curriculum designs, instructional practices, and education policies. The growing gap between new developments in the expanding field and the response in design education is evident in the literature. Ball (2010) argues that in the process of developing programs that explicitly incorporate creativity we need to be “mindful of the need to offer our students creative experience and environments which are fit-for-purpose for the 21st century.”

Engaging peer tutors in studio could be a critical consideration in strategies to support students’ capacity to thrive in these expanded creative cultures and in the transformation of undergraduate design education toward a more collaborative, inclusive, and innovative learning environment. The first year students in the present study made links between the culture of learning they were exposed to and the industry they will be working in. The alignment between the learning and practice environments suggests a role for peer tutors that may help to better prepare graduates to work in increasingly collaborative and interdisciplinary professional settings.

A growing recognition of the role of peer demonstrators and tutors in enhancing students’ learning in practice is not limited to the discipline of design. A recent cross-institutional study, funded by the Office for Learning and Teaching in Australia, examined student and demonstrator experiences and perceptions of the undergraduate physics laboratory to enhance student experiences in the laboratory learning environment (Kirkup, Braun, Varadharajan, Buffler, & Lubben, 2016, p. 5). As a particular focus, the study investigated the “influence of alignment between the background, ambitions, and views on teaching and learning of students and demonstrators on student engagement and satisfaction” (p. 5). Findings indicated that students who were more closely aligned with demonstrators were perceived to be “more helpful and encouraging of deep thinking than those with seven or more years of post-high school study of physics” and “peer demonstrators were perceived to be as effective as more senior [principal] demonstrators at assisting students to think deeply about the experiments” (p. 5). Consistent with findings in the present study, where first year students repeatedly referred to the positive interpersonal skills of the peer tutors in studio and the benefits of this to their learning, Kirkup et al. note that “a large proportion of students praised the attributes and inter-personal skills of their assistant demonstrators,” describing them “as being ‘more approachable and helpful’” (p. 23). Parallels between this research and the present study suggest that significant benefits could be gained through a sharing of approaches across disciplines (such as science, art, design, engineering, and medicine) in the way peer tutors are used to support student learning and enhance practice-learning environments.

Our study raises questions about whether the use of peer tutors in design studio should be the norm rather than the exception. Should peer tutors be used consistently in studio and have a more formalised role? For this to occur, a new model involving regular use of peer tutors would have to be developed and supported as a core part of strategic planning and curriculum development. It is productive to consider the same question that is being

asked about assistant demonstrators in the physics laboratory—what would it take for the role of peer tutors in studio to be “placed front and centre”? (Kirkup et al., 2016, p. 26). To take this further, what role might peer tutors have in co-developing studio projects and experiences? Kirkup et al. (2016) acknowledge that implementing a successful “inquiry-oriented model of learning in a laboratory requires the experiment designers, demonstrators and students to be on the same page” (p. 28). Similarly, in the studio environment, further partnerships between the designers of studio projects, studio leaders and peer tutors could provide an opportunity to create studio experiences that are more highly valued by students.

It is productive to question whether traditional studio models, comprising a studio leader, studio staff, and a group of students from a single cohort, are adequate for developing the kinds of collaborative and creative skills that are increasingly valued in practice today and in the future. Given the increasing emphasis on collaborative and creative skills in design practice, which implicit assumptions that we make about student learning in studio, at either the paradigmatic, prescriptive, or causal level (Brookfield, 1995) might be productively uncovered and explored? For example, are we underutilising a valuable resource if we don’t incorporate peer tutors as a deliberate conduit for learning in the design studio, given that students view the role of peer tutors as pivotal to their learning of design? We need to acknowledge both the strengths and limitations of a single studio tutor and weigh this up against the benefits associated with the introduction of peer tutors (assuming they are well prepared, suited to, and supported in the role). Future research could focus on obtaining a more in-depth understanding of the role of the peer tutor—how the role is both different from, and complementary to, the role of the studio tutor—and the significant potential of the peer tutor role to the advancement of learning in the design studio in higher education.

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