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## Putting the PASS in Class: Peer Mentors' Identities in Science Workshops on Campus and Online

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## **Putting the PASS in Class: Peer Mentors' Identities in Science Workshops on Campus and Online**

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### **Abstract**

In this paper, we analyse the introduction of peer mentors into timetabled classes to understand how in-class mentoring supports students' learning. The peer mentors in this study are high-achieving students who previously completed the same course and who were hired and trained to facilitate Peer Assisted Study Sessions (PASS). PASS gives students the opportunity to deepen their understanding through revision and active learning and are typically held outside of class time. In contrast, our trial embedded peer mentors into classes for a large (~250 students) first-year workshop-based course. We employed a participatory action research methodology to facilitate the peer mentors' co-creation of the research process. Data sources include peer mentors' journal entries, student cohort data, and a focus group with teaching staff. We found that during face-to-face workshops, peer mentors role-modelled ideal student behaviour (e.g., asking questions) rather than acting as additional teachers, and this helped students to better understand how to interact effectively in class. The identity of embedded peer mentors is neither that of teachers nor of students, and it instead spans aspects of both as described using a three-part schema comprising (i) identity, (ii) associated roles, and (iii) associated practices. As we moved classes online mid-semester in response to the COVID-19 pandemic, mentors' identities remained stable, but mentors adjusted their associated roles and practices, including through the technical aspects of their engagement with students. This study highlights the benefits of embedding mentors in classrooms on campus and online.

### **Introduction**

Peer learning in higher education has received increased attention in recent years (e.g., Clark & Raker, 2020; Gamlath, 2021; Hoiland et al., 2020; Zhang & Bayley, 2019) as a way to support student learning, including in first-year science courses (e.g., Stephenson et al., 2019). One common form of peer learning is Peer Assisted Study Sessions (PASS) (Spedding et al., 2017), in which high-achieving students who have completed a course previously are hired and trained as peer mentors for current students. A standard approach to PASS is for peer mentors to facilitate weekly peer-led sessions scheduled outside of class time. Faculty encourage students to attend PASS, and participation is voluntary. PASS has been shown to be effective for students who participate (Dawson et al., 2014; Spedding et al., 2017). Typically, however, a minority of a student cohort will participate, with the number of students participating varying from week to week.

Embedding peer mentors in timetabled classes, the focus of our research, contrasts with how peer learning programs are commonly structured; i.e., as separate peer-led sessions (Ravishankar, 2019). This alternative approach in which mentors model learning practices and build rapport with students invites attention to new considerations in designing peer mentoring programs, including questions around the identities peer mentors assume in the classroom space: neither that of students nor of lecturers but spanning aspects of both. Our focus in this paper is on the identities and associated roles and practices of peer mentors embedded in classrooms in a large cohort (243 completing students), first-year core course in the Bachelor of Science at the University of Newcastle, Australia. The peer mentors in this instance were four second-year women students new to mentoring and studying science and science-combined degrees majoring in geography, biology, chemistry, and math. The initiative was a collaboration of the Peer Programs Unit in Academic Division and teaching staff in the faculty of science.

A brief introduction to the course, curriculum, and student cohort will be helpful for understanding the context for the trial embedding peer mentors. The course discussed in this article is SCIE1001 Professional Scientific Thinking. It is one of a pair of new (introduced in 2019) first-year core courses in the Bachelor of Science. The introduction of this course is part of a broader collaborative curriculum design process used to redesign the Bachelor of Science (McBain et al., 2019). In addition to disciplinary learning achieved through majors, transferrable skills, also referred to as “soft” skills, are essential for graduates seeking careers in science and beyond (Deloitte Access Economics, 2014; Rice, 2011). The course introduces students to the practices and understanding that support high-quality scientific thinking and work. These include exploration of deductive, inductive, and abductive reasoning used in science; the role of critical and creative thinking in scientific practice; written, oral, and visual communication skills; working collegially; and critical appraisal of the role of science in society. The course is offered in a blended mode comprising a weekly two-hour workshop (each with ~40 students) with two workshop facilitators, and as discussed here, with one peer mentor. Significant learning materials are provided online for students’ preparatory work before workshops and for reflections on their learning afterwards. Workshops are designed as active learning opportunities and are usually noisy for periods as students work together in table groups with staff facilitating. Peer mentors move between groups of students, sitting with students at group tables and choosing as appropriate to play more or less prominent roles in group learning processes. This could include modelling asking questions and skilfully encouraging students to extend their thinking during brainstorming, discussions, and other forms of working in groups. At other times, the peer mentors would take on a more “teacherly” role, for example, by sharing with table groups or the whole of the class insights into how they had previously approached specific assessment tasks for this course.

The assessment framework comprises three graded items. First, an online multimedia presentation is due mid-semester in which students explain in accessible language something learned in the first part of the course. Second, they complete a Nobel Prize-inspired nomination for a scientist of each student’s choosing, highlighting evidence of their nominee’s engagement in critical and creative thinking. Lastly, they write a journal at the conclusion of

the semester presenting students' meta-reflections on their learning experiences in the course, drawing on weekly journal entries made through semester. An 80% attendance requirement is used to communicate to students the value of the workshop as specialist learning space and as a site for learning specific skills; this mirrors the approach adopted for laboratory courses that also mandate minimum attendance in order to achieve learning outcomes.

Embedding peer mentors in classrooms ensures that all students in a cohort have access to PASS; this is a significant increase over typical student participation rates, which can be in the order of 20% of a cohort and variable from week to week. As expected, achieving participation of all attending students through embedding peer mentors in classrooms is necessarily more labour intensive: rather than a more limited number of perhaps one, two, or even three external one-hour weekly sessions, in this instance, embedding peer mentors in timetabled classes means staffing all seven two-hour workshops timetabled each week. Embedding peer mentors does achieve total cohort participation, but it is more expensive than traditional, peer-led external PASS sessions.

The trial discussed here was implemented in the first half (i.e., semester one) of 2020 and, inevitably, the course was impacted by COVID-19. Our primary response was to shift classes from on campus to online, beginning in Week 5 of the semester. Through the shift to teaching and learning online, peer mentors necessarily adapted their approaches to mentoring, evident in a matching shift in their associated roles and practices.

The paper proceeds as follows: In the next section, we review the literature on embedding peer mentors in class. In section 3, we articulate the methodology used for the study. In section 4, we weave together the study's findings and discussion. Section 5 provides some concluding reflections and suggested directions for further inquiry.

### **Literature Review**

Peer learning is referred to by multiple terms in the literature (Zhang & Bayley, 2019). In this paper, we are referring to PASS, where second-year students who previously excelled in a first-year course facilitate voluntary study groups of new students in the same course. PASS is consistent with the Supplemental Instruction model (for more on Supplemental Instruction in higher education, see Hansen et al., 2021 and Hildson, 2013). As might be expected, much of the peer learning literature centres on students and their learning experiences (e.g., Boud et al., 2013; Stephenson et al., 2019). One common finding is that first-year students can find peer mentors more relatable than teaching staff (de Menezes & Premnath, 2016; Heirdsfield et al., 2008).

PASS is usually organised as separate, additional sessions outside of class time (Spedding et al., 2017). However, there are disadvantages to this approach (Outhred & Chester, 2010). Earlier work identified that even as a majority of students in a course typically indicate interest in PASS, only a minority of students will participate (Murray, 2006). A second disadvantage is that the students who may benefit most from PASS may in fact not be the students participating (Hill & Reddy, 2007). In short, student engagement in PASS when offered as a voluntary supplemental initiative can be uneven (Kahu & Nelson,

2017). This is reflective of the broader challenge of achieving equitable participation and success in higher education (Gordon et al., 2021).

Embedding mentors in classes is less common in the design of peer learning programs and is also less researched. Outhred and Chester (2010) provide an early inquiry into aspects of embedding peer mentors into classes, though with a focus on the experiences of teaching staff rather than the mentors themselves. Ravishankar (2019) provides a recent example of embedding mentors in a large first-year engineering course with a focus on implementation considerations and the positive impact on learning outcomes for students.

The experiences of mentors—embedded or otherwise—have received only limited attention. Heirdsfield et al. (2008) explored this area with an aim of better designing training programs for peer mentors working with first-year students in teaching programs. In that study, peer mentors documented their experiences fortnightly, and Heirdsfield and co-authors analysed peer mentors' reports to identify themes including preparation for mentoring, personal approaches to mentoring, benefits of mentoring, and frustrations of mentoring. Clark and Raker (2020) similarly analysed peer mentors' journal entries. In contrast, Hoiland et al. (2020) conducted interviews with peer mentors and analysed interview transcripts.

The benefits to mentors from participating in peer learning programs have also received considerable attention, and benefits to mentors have been framed in various ways including in terms of academic development and graduate or professional attributes. Recently, a special issue in this journal brought focus to benefits for mentors (Bunting, 2019, provides an introduction). Extending the focus of earlier research, Scott et al. (2019) explored the way participation in peer mentor programs can foster peer mentors' graduate attributes, and Young et al. (2019) suggest that involvement in peer mentoring can indicate peer mentors' academic success. Chase et al. (2020) conducted semi-structured interviews with former peer mentors after graduation with a goal of understanding longer-term benefits of participation to peer mentors. The limited attention to date invites further engagement with mentors' experiences in peer learning programs.

### **Methodology**

As noted above, the focus of this research was peer mentors' identities. The research question itself, and the methodological approach employed, were co-created by the teaching staff and the peer mentors whose in-class identities are the focus of this inquiry, lending a participatory action research (PAR) dimension to the study. At its core, PAR centres the wisdom and knowledge of those with most to gain from research outcomes (Halliday et al., 2018). In this case, peer mentors themselves defined and elaborated on their expertise and perspectives “positioning them as architects of research rather than objects of study” (Galletta & Torre, 2019, n.p). For this study, we used a mixed method (Schoonenboom et al., 2017) approach to data collection and analysis, with an emphasis on journaling in order to “make sense” of mentors' experiences. Themes emerging from mentors' journal entries were triangulated with other data. These included students' experiences with mentors collected as responses to a version of Brookfield's Critical Incident Questionnaire modified for use online (Brookfield, 1995; Phelan, 2012) for the purpose of course

evaluation. Mentors' emergent themes also aligned with workshop facilitators' understanding of the contributions of peer mentors in the course as explored through a focus group scheduled at the end of the semester. Lastly, we also drew on available descriptive statistical data to better understand the cohort and student engagement with the course. As noted above, the science program is the subject of an ongoing wholesale revision through a collaborative curriculum design (McBain et al., 2019) process, so human ethics approval (QA178) for evaluative research related to the program had been obtained earlier.

### **Peer mentors' experiences: Journal entries**

Throughout the semester, the peer mentors kept reflective journals, where they reflected on and evaluated their experiences in workshops. This process partially mirrored the reflective journal assessment task set in the course and described above, and with which they were already familiar having completed the course previously. The primary purpose of their journaling in this instance was to support their mentoring practice (Greetham & Ippolito, 2018; Minott, 2020). Without being obliged to do so, peer mentors took up this suggestion willingly before the semester started. Happily, self-directed journaling also meant the mentors created records of their experiences that were later available to be drawn on for the purpose of this study. During the semester, an ongoing conversation led to the identification of a research question that teaching staff and peer mentors were interested in pursuing, along with ideas for how to go about that. At the conclusion of the semester, the peer mentors individually highlighted themes in their journals. Mentors were encouraged to review their journals and identify and share entries relevant for understanding their experiences with the mentor role in class.

### **Peer mentors' experiences: Facilitated discussion**

Peer mentors then engaged in a series of two discussions facilitated by a colleague not involved with the course. At the first facilitated discussion, experiences of the individual peer mentors emerged and were first grouped into suggested themes by the facilitating colleague. The analysis was reviewed and built upon by the peer mentors with specific excerpts and quotes from their reflective journals guiding discussions through the participatory approach (Galletta & Torre, 2019). The course coordinator was invited to join the second facilitated discussion. At the second discussion, again through a collaborative process, participants then brought structural coherence to the themes, resulting in a three-part schema comprising mentor identities and associated roles and practices (see Table 1).

## **Findings and Discussion**

### **The student cohort and attendance**

The cohort of 243 completing students was split evenly along gender lines with women students (127 students) comprising 52%. Most students were aged 20 and under (171 students, 70%), 37 students (15%) were aged 21–24, and smaller numbers again were aged 25–29 (17 students, 7%), 30–39 (10 students, 4%), and 40 and older (8 students, 3%). A large minority of students (38 students, 16%) identified as having one or more disabilities. Almost all students in the cohort were domestic (230 students, 95%), with two students from each of China, Hong Kong, and Saudi Arabia, and one student from each of Germany, Hungary, India, Norway, Sri Lanka, Switzerland, and Uganda. Of the 230

domestic students, five students (2%) identified as Aboriginal and/or Torres Strait Islander. Amongst domestic students, a large minority (68 students, 30%) were classified by postcode (DESE, n.d.) as being of low socioeconomic status (SES), with a smaller minority (27 students, 12%) classified as high SES, and the majority (134 students, 58%) classified as medium SES.

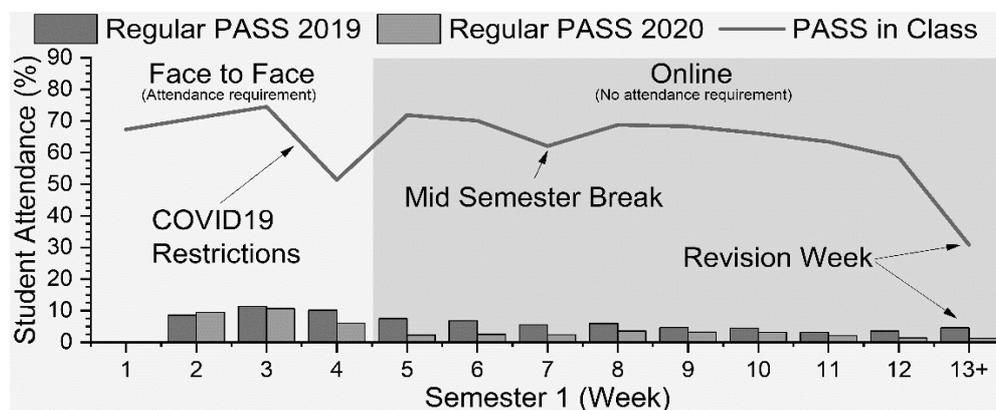


Figure 1. Participation in PASS in SCIE1001 Professional Scientific Thinking in 2020 with comparisons.

All students in SCIE1001 had access to peer mentors in workshops; participation (Figure 1) is represented by the student attendance line. SCIE1001 workshops were offered on campus during the first four weeks of the semester and were then moved online in response to the COVID-19 pandemic. Attendance was high throughout the semester, but note that attendance dropped markedly in Week 4, as students chose to stay away from campus. The 80% attendance requirement was relaxed for online workshops from Week 5 onwards, but even so, attendance remained high. Attendance rates for PASS organised externally to classes are typically much lower and variable across weeks; these are represented for undergraduate courses overall for 2020 (lighter columns) and 2019 (darker columns) as examples of a more typical spread. Note that for regular PASS, participation rates usually start relatively high and then decline slowly before picking up somewhat in the last weeks of semester, as seen in the 2019 data. However, in 2020, participation dropped quickly when classes moved online. Participation increased slightly after the mid-semester break before slowly declining again, similar to the previous year, but in contrast to 2019, there was no late-semester uptick in participation.

### Mentors' identities

Mentors' journal entries provided rich material from which clear common themes emerged. The themes that emerged here share some consistency with themes noted elsewhere in the literature generated through other research methodologies (e.g., Clark & Raker, 2020; Heirdsfield et al., 2008). However, the emergence of themes through this participatory research project was not straightforward. The distinct and nuanced position of mentors' identities, occupying a space separate from both teaching staff and students in the course, led to challenges in "making sense" of mentors' role in class. Through the facilitated discussions and with reference to journal entries, we identified an overarching *identity* for peer mentors embedded in class, the *associated roles* mentors played, and the various *associated practices* they engaged in while in class. This three-part schema comprising identity, associated roles, and

associated practices, gives focus to key aspects of their work in the course, as reflected in Table 1.

Table 1

*A three-part schema to the identities of peer mentors when embedded in class, including the elements (i) identity, (ii) associated roles, and (iii) associated practices, as well as three associated themes for each element*

<b>Element</b>	<b>Themes emerging from mentors' journal entries</b>
Identity	<ul style="list-style-type: none"> <li>• Bridge between student and facilitator</li> <li>• Setting culture of the class</li> <li>• Approachable</li> </ul>
Associated roles	<ul style="list-style-type: none"> <li>• Model student</li> <li>• Building rapport over time</li> <li>• Lessening the hierarchy</li> </ul>
Associated practices	<ul style="list-style-type: none"> <li>• Modelling practices</li> <li>• Reading body language</li> <li>• Being flexible and adaptable</li> </ul>

Themes across identities and associated roles and practices are tightly interwoven. For example, building rapport, listed as an associated role above, is integral to bridge-building and setting the culture of the class; i.e., key themes of mentors' identities.

Identity comprises three themes. The first is mentors' identity as a bridge between students and workshop facilitators. Peer mentors positioning themselves in the classroom with identities close to that of students meant that mentors were able to be the bridge between students and the academic staff. Students were able to communicate with mentors who were then able to communicate any questions or issues with academics or answer themselves. This made the adjustment to university easier for first-year students as they had someone around their own age who was familiar with their experiences and the course content to whom they could ask questions.

Mentors noted that students found the mentors to be very accessible, more so than workshop facilitators:

I found that students were often asking me to explain instructions to them rather than asking one of the [facilitators] (Peer Mentor A, Journal).

Mentors recognised that their identity was distinct from both students and teaching staff, and that it was important for linking students and staff, both academically and relationally:

We're the bridge between students and the lecturers and tutors (Peer Mentor A, Facilitated Discussion).

The second theme is the mentors' identity in setting the culture of the class. The mentors' unique position in the class meant that they could create an open and inclusive environment by encouraging student engagement with academics in different ways:

I felt that [the course coordinators] and the other lecturers set the overall culture of the course while we helped to set the culture of the class (Peer Mentor D, Facilitated Discussion).

Mentors recognised that they could facilitate constructive discussions on difficult topics with students:

At one group's table, I facilitated a really constructive and respectful conversation....I was able to redirect the conversation and ask all other members of the group their thoughts, ensuring everyone contributed (Peer Mentor D, Journal).

The third theme is the mentors' identity as being approachable: mentors were presented as separate from the teaching staff and as such, students found them easier to engage with and ask questions of. Mentors noted that their unique position in workshops meant that students could view them as fellow students:

I think that [the students] view me as more of another student, especially when they see me outside of their workshops (Peer Mentor C, Journal).

Mentors' approachability was also expressed through being able to share their recent experiences as students in the same course:

I told the students that I did not do very well in the reflective journal task, and I believe that would be a constructive thing to hear as it makes me seem like less of an "overachiever" (Peer Mentor C, Journal).

The theme of mentors as approachable is consistent with the literature, as is that of mentors serving as a link or connection between students and teaching staff (see de Menezes & Premnath, 2016; Heirdsfield et al., 2008; Ravishankar, 2019; Zhang & Bayley, 2019). The role of mentors in setting class culture is less apparent in the literature but was prominent for the peer mentors in this instance.

### **Associated roles**

Peer mentors were instrumental in forming a comfortable and collaborative workshop environment, and this was expressed through roles associated with their identities. Associated roles were (i) modelling exemplary student practices, (ii) building rapport with students, and ultimately (iii) lessening the hierarchy of the classroom. Throughout the semester, the peer mentors' identities remained largely constant; however, the roles required fluidity and adaptability. Some mentors found that their role was "evolving each week" (Peer Mentor B, Journal) as they adapted to the requirements of each week's workshop in order to best support students. With the transition to online delivery of the course, the peer mentors continued to attend and assist in online workshops. This significant transition required thoughtful re-evaluation of their roles and for them to "find [their] feet again" (Peer Mentor A, Facilitated Discussion).

Associated roles comprise three themes. The first is the mentors' role as model students in the classroom. Mentors noted that they were able to provide examples of assignments and advice on how to produce high quality work:

I started by showing them my example and talking about the structure, how I started by answering some of the questions from Blackboard and then going through my past reflections and finding some main points that resonated with me...I also talked about the process which I went through to do my assignment (Peer Mentor A, Journal).

The second theme was the mentors' ability to build rapport with students over time. This meant that through the first few weeks, students became comfortable engaging with mentors and did so more rapidly than with workshop facilitators. This was evident in excerpts from mentors' journals:

People became more comfortable...We had people using their microphones in the main room [online], putting their hand up, asking questions, and talking (Peer Mentor D, Facilitated Discussion).

The final theme in mentors' roles was the mentors' ability to lessen the classroom hierarchy. This links with mentors' identity as a bridge between facilitators and students. Mentors were more approachable than the academic staff, were able to converse with students as peers, and were able to navigate traditional barriers between students and staff in classrooms. Mentors were also able to engage in discussions with students about assessment tasks and were easier for students to talk to since mentors were not involved in marking.

Mentors noted that they were uniquely positioned in the class:

The power dynamic between the lecturers and students compared to us and the student is different; we seem to be able to relate better (Peer Mentor D, Facilitated Discussion).

Mentors further noted that by joining students at their tables, they were able to lessen hierarchy:

It is much better when we are there next to them rather than out in front [because doing so gets rid of those power relations or hierarchy in the room] (Peer Mentor B, Facilitated Discussion).

Mentors recognised that their unique position on the teaching team meant they could handle conflicts that arose in a positive way:

As peers, we had more flexibility and were received well by students. We could use humour, help them work through processes, and give them pointers. I got the impression that we [were] more approachable (Peer Mentor D, Facilitated Discussion).

The associated roles are partially consistent with the literature. Building rapport and lessening hierarchy are consistent with being more relatable (de Menezes & Premnath, 2016; Heirdsfield et al., 2008; Zhang & Bayley, 2019). However, the role of mentors as model students may be specific to their

embedding in classes, rather than facilitating traditional external peer-led sessions.

### **Associated practices**

Associated practices also comprised three themes. The first theme was modelling constructive student practices, which mentors did in two ways. First, mentors modelled constructive practices in the classroom including listening, engaging in, and contributing to discussions:

If there were no microphones on, we jumped in [to the breakout rooms online] and coaxed the students to turn their microphones on (Peer Mentor D, Facilitated Discussion).

Second, mentors shared their effective previous practices from when they themselves were students, including tips for completing assignments well and on time, so that students could submit their best work:

By showing multiple examples of assignments [from the different peer mentors], we were able to show the different ways to do an assignment. We could say that you can do things well either way—there is not necessarily a correct way (Peer Mentor A, Facilitated Discussion).

Another theme amongst associated practices was the mentors' ability to read the body language of students in the face-to-face workshops. This was a key part of knowing where mentors would be most useful in the classroom, as they could tell who was engaged or not through body language. For example:

It's like a social contract; no one will be disrespectful if you're right there. Reading body language, you can be more helpful. I found when I walked around between groups, people would put their phones away and make an effort to at least look like they were paying attention (Peer Mentor A, Facilitated Discussion).

The final theme was the flexibility and adaptability of the mentors, which they expressed in multiple ways. First, peer mentors sometimes engaged in some practices that were similar to those employed by facilitators to guide the workshop and discussions, and at other times, demonstrated model student practices. For example, similar to workshop facilitators, mentors could be called on to draw mind maps on the whiteboard during some lessons. At other times, mentors would sit with students at their tables and be part of their discussions. Second, flexibility was important with reference to the curriculum: each week's workshop comprised different learning activities, and this meant that mentors had to continually adapt their practices to assist facilitators and support students. Lastly, mentors also demonstrated flexibility and adaptability responding to common challenges across a teaching semester, such as covering for colleagues away from class through illness:

I filled in for [Peer Mentor C] when she was sick, and I didn't know the students, which was hard. It was also a 5-7 p.m. class, so people were tired and disinterested. Some [students were] on their phones. The facilitators asked me to sit with the "problem table." I tried to help them stay engaged, elaborating, keeping discussion going as best as I could (Peer Mentor B, Facilitated Discussion).

Peer mentors' associated practices add case-specific detail to other insights already identified in the literature.

### **Shift to online learning**

The shift from face-to-face to online workshops happened rapidly, between Week 4 and Week 5, and with little transition time for students, teaching staff, and peer mentors. The time was highly uncertain for students, reflected in attendance dropping and rebounding (see Figure 1).

Mentors and academics were introduced to Blackboard Collaborate as the platform for online workshops during the weekly workshop preparation meeting for the teaching team prior to the transition to the online learning. Collaborate allowed for online workshops to be similar to face-to-face workshops with digital features that somewhat replicate face-to-face conditions including microphones and video, a chat function, virtual whiteboards, and screen sharing, as well as the option to create breakout rooms for working in groups.

Peer mentors demonstrated great adaptability and flexibility during the shift to online workshops in the context of uncertainty about the duration of online learning, how students would react, and how this would impact students' learning. Amongst all that other uncertainty, mentors had to take time to find their identities again and assume new approaches to appropriate roles and practices in the online space:

I felt awkward—we had to find our feet again and work out the technology. As moderator, we had the mic and camera on, but students often wouldn't turn on theirs, so this made us seem separate from them. For the first few weeks, I struggled to figure out what my role was in the online space (Peer Mentor A, Facilitated Discussion).

Mentors' practices had to evolve. On the one hand,

The online classroom had a somewhat familiar layout of whole classroom and breakout rooms (similar to joining a table of students) (Peer Mentor B, Journal).

But on the other hand,

There isn't as much we could do through the screen—we can't go and sit with the students or see their expressions or body language to see if they are engaged (Peer Mentor D, Journal).

Further, Collaborate requires participants joining the online platform to identify as either students or staff (designated "moderators"), and there is no designation for a third identity in an online workshop:

We ended up feeling like third moderators....So we were on the same level with facilitators (Peer Mentor B, Facilitated Discussion).

The shift online also resulted in other technologically driven changes in roles: one peer mentor assumed additional duties to assist a facilitator with an unstable home internet connection, and

had to be ready to switch roles from a PASS Leader to a facilitator....Initially, I was very worried about the possibility that I may have had to run it by myself. However, by the end of the semester, I felt comfortable with running the class individually (Peer Mentor C, Facilitated Discussion).

Modelling good practice evolved into using and encouraging students to use microphones and cameras during online workshops. Mentors would sometimes need to respond to student questions via the chat and help solve technology issues preventing students from participating. Mentors also lost the ability to read body language of students and could no longer use it to see where they were needed; mentors instead would check whether students were using their microphones and cameras in breakout rooms to monitor participation. The rapport that mentors had built with students in the first few weeks of classes meant that mentors could still relate to students and cut out a lot of the awkwardness often experienced in the sudden shift to online learning spaces:

Beginning the course as face-to-face workshops helped to build rapport in an online setting. Knowing people's faces helps [our ability to engage with students online] (Peer Mentor B, Facilitated Discussion).

Peer mentors also demonstrated critical insights into wider implications of the shift online and, in particular, what the shift online might mean for some students in the midst of a pandemic:

For a lot of people, these classes are the only interaction they have when in isolation [in response to the pandemic] (Peer Mentor A, Facilitated Discussion).

Peer mentors also reflected on how the shift online might change learning experiences for introverted students (introversion, extraversion, and ambiversion are explored in the course to support students engaging in collegial endeavours to think about how they work and how others work):

It is a levelling situation. If [a student is] an introvert, they could interact and come out of their shell online. It's a safer environment, almost anonymous (Peer Mentor D, Facilitated Discussion).

Even as peer mentors' identities were stable across the shift from workshops on campus to workshops online, associated roles and practices were adapted to the extent that the online learning mode offered new opportunities and constraints to mentors for modelling roles and practices.

### **Benefits to peer mentors**

Consistent with findings in the literature (e.g., Scott et al, 2019; Young et al, 2019), mentors identified many benefits to personal and professional development that the mentors experienced through participation in the program. For example, as well as completing PASS training and engaging with

students during the weekly workshops, mentors also joined and contributed to weekly teaching preparation meetings with the academic staff. During these meetings, mentors received mentoring of their own and gained experience working in a professional collaborative academic environment. Mentors developed their interpersonal and communication skills and grew in confidence as the semester progressed, forming connections with each other and experienced a lessening of imposter syndrome (Wilkinson, 2020). By attending teaching meetings and engaging with academics, mentors gained career perspective and insight, networking opportunities, and academic benefits such as understanding what markers look for and how to properly analyse marking rubrics. The opportunity to be part of the research project, of which this article is a part, is also a benefit. Being a generator of new knowledge and subject of the research, rather than its “object” (Galletta & Torre, 2019) meant that mentors were able to glimpse PAR methodologies and academic career pathways.

### **Student and teaching staff perspectives in alignment**

Anonymous student responses to the Critical Incident Questionnaire issued mid-semester and again at the end of semester were largely consistent with the aspects of identities, associated roles, and practices identified through the peer mentors’ reflections, with students describing peer mentors as approachable and “easier to talk to” or “less intimidating” than the facilitators. The following representative comment illustrates:

The peer mentors can help bridge the gap between how the teachers think they will engage with how the students may actually engage in the content.

Workshop facilitators were also asked for their perspectives on embedding peer mentors in workshops and reported similarly aligned perspectives. The following transcribed comment illustrates:

When we use the breakout groups in the class [online], we made sure we sent [Peer Mentor B] into them. [The students] liked to talk to her more than they liked to talk to us...[We] would come back and say, “Well, we didn’t get much conversation there” [but]...she would...constantly get stuck in some or other group because they were essentially talking to her more than they wanted to engage with us (Workshop Facilitator C, Focus Group).

### **Conclusion**

Embedding peer mentors in classes is not a common way of administering PASS and has received only limited attention in the literature. This study contributes to the literature by focussing on peer mentors’ identities, roles, and practices through a trial of embedding peer mentors in a first-year core science course. Embedding mentors ensures all attending students benefit from engagement with PASS. A focus on mentors’ identities is important because when embedded in classes, mentors’ identities are distinct from those of students and academic staff in important and nuanced ways. Through a PAR methodology that includes the peer mentors themselves, we have suggested a three-part schema for mentors’ identities that includes associated roles and practices. Mentors act as bridges between students and staff, contribute to the

creation of the learning culture in class, and are seen by students as approachable in ways that academic staff perhaps cannot be.

Mentors' identities remained stable as workshops were shifted from on campus to online in response to the COVID-19 pandemic. However, moving classes online mid-semester led to mentors reshaping their roles and practices, including through the technical, social, and spatial aspects of their work and their engagement with students—adaptations that were essential for supporting students to also adapt effectively to changes in learning mode. Nuanced understanding of peer mentors' identities will be important for effectively implementing and evaluating embedded peer mentor initiatives in higher education—mentors occupy identities that are neither those of students, nor lecturers, but spanning both. Further research could helpfully explore the opportunities and constraints that might apply to embedded peer mentors across multiple learning modes, including on campus, blended, online, intensive, and on country.

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