"omg same"

The role of empathy and near-peer teaching in PGR teaching in the COVID era

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Fran is a final-year PGR in the Institute for Climate and Atmospheric Sciences at the University of Leeds. She started her PhD, focusing on organised convection over West Africa, in 2019. Since then, she has taught on various mathematics, computing, and meteorology courses for undergraduates and master's students on environmental science courses at Leeds. The wild variation of teaching quality during her undergraduate degree inspired an interest in pedagogy in higher education, and she was awarded an Associate Fellowship of the Higher Education Academy at the end of 2021. In her spare time, she enjoys evaluating ludicrous weather headlines in tabloids.

Abstract

Literature on education at all levels, from early-years to postgraduate, highlights the role of positive relationships in effective teaching. My experience of teaching undergraduates as a PGR has stressed this emphatically, especially since the start of the COVID-19 pandemic. The impacts of what many students know as "the Rona" are twofold: not only has undergraduate mental health suffered through the uncertainty and isolation of the recent years (e.g. Appleby et al., 2022; Catling et al., 2022), but the alreadyoverwhelming workload of the academic staff primarily responsible for the education and welfare of students swelled during the transition to online teaching. Overcommitting staff even further results in reduced scope for relationship-building with students, in terms of both time availability and emotional capacity. PGR teachers, by comparison, have more flexibility and freedom to connect with undergraduates directly and in smaller groups, and the role of building relationships to support learning can fall to them.

In this reflective account, I consider how my role as a tutor of Science, Technology, Engineering, and Maths (STEM) subjects for interdisciplinary undergraduate students allowed me to create an encouraging space for them to build relationships with me and each other. I found that near-peer teaching and the mutual trauma of studenthood in the pandemic created a strong connection where I

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was able to hear the students' worries and concerns, not simply about the calculus I taught but regarding their entire course structure, systemic biases affecting their experience of their degrees, and the approach of the university as a whole.

Keywords: Relationship-based teaching, empathy, near-peer teaching

"I just feel like the teachers don't know us as well as our teachers at A-level did," said a student in my class, in her first semester at university. "It's like... nobody really cares?"

It is a feeling I could empathise with, as many other students. transition from secondary school to Higher Education (HE) is a challenge that is well-documented in the literature. Students may have trouble adjusting due to mismatched expectations of the HE experience (Pancer et al., 2000) and working to build their own identities at university (Briggs et al., 2012; Pascarella & Terenzini, 2005). The difference between the immediate feedback from and personal investment of teachers who are exclusively paid to educate to a specification, nationwide overworked, fraught professors who spend maybe 10% of their time teaching several classes and hundreds of students in total, leads to a dramatic shift in learning style.

Of course, the struggles of this transitional period have been exacerbated in the last few years by the impact of the Covid-19 pandemic. Initially, when all teaching was remote, a significant proportion of students could not access teaching at all (Mckie, 2020), but even as universities adapted to hybrid education, many students felt as though their academic and social experience had significantly been affected (ONS, 2020). This understandable: not only was the mental health of students hugely impaired by lockdown and limitations on how students could socialise with their peers, but university staff were also

dealing with the immense pressures of adapting teaching materials to hybrid formats, the increasing demands of an academic career, and the emotional labour of helping students who are struggling too (e.g., Batty, 2020; Course Hero, 2020).

The comment my student made in this class really highlighted for me the importance of students being able to develop a positive relationship with their teachers. Literature across all levels of education highlights how crucial the teacher-student relationship is (e.g., Roorda et al., 2011; Quin, 2017), and recent work has emphasised this for HE too (Hagenauer & Volet, 2014). Certainly, in leading classes and demonstrating in computing labs, I have found that students often need to be comfortable enough to say that they don't know something: among peers it can require a certain vulnerability to admit uncertainty. Moreover, students want to feel a sense of belonging in their university community (Pascarella & Terenzini, 2005), and strong relationship with some or all their educators can really help them feel welcome and acknowledged in the HE environment.

I made it a priority to make the areas where I taught a safe space for students to be comfortable to make mistakes and express their feelings. PGRs are particularly well-placed to connect with students because they can be, as was the case for me, of a similar age range and demographic to their students. This is often referred to as near-peer teaching and has been demonstrated to be an effective practice in medical sciences

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(Nelson *et al.*, 2013) as well as outdoor fieldwork (Bester *et al.*, 2017), but I have found this just as relevant in mathematics and computing teaching for geoscience students.

One of the key facets to increase trust has, in my opinion, been sharing similar vulnerabilities: opening up about my previous experiences in undergraduate degree, and what I found difficult, and how I worked around that. As well as this, I was honest about the experience of studying for a PhD during the pandemic and the experiences of teachers with adapting to this, which I think students appreciated. All the while, I spoke their language: more than once in my classes I had expressed the sentiment, "same!". Struggling with a degree at any level is something that almost any student can connect with, and with the shared experience of a limited degree experience due to the pandemic there was a lot of common ground: it transpires that online field trips and online conferences are a mutually disappointing experience.

Furthermore, as a woman in STEM I could empathise with a lot of the anxieties I saw in the young women in my classes. In some practical sessions, they were overwhelmed with the amount of work and concerned they would never be able to learn how to do it. Sharing my own experiences with perfectionism, and how I overcame the fact that coding often has no right answer and sometimes can incredibly frustrating even for people with expertise in the field, was often reassuring to them. In a way, I tried to model behaviour for their learning, which has been shown to be effective in geosciences (Hernandez et al., 2018). Over time, in different classes, I saw significant increases in the confidence of students in a similar demographic to myself, progressing from the stage of "I can't do it!" and "I don't know how!" to productively thinking through problems

and interpreting error messages independently.

Perhaps most importantly, PGRs are best placed to communicate with students because thev have the capacity. Professors and lecturers are incredibly overworked, often working long hours and responsible for tens of under them, without even beginning to count undergraduate students; it is not unreasonable that they do not have the capacity to learn the names of the students in every lecture they deliver. However, it can be dehumanising to be constantly taught by people who do not try to get to know you as a person. PGRs teaching in STEM disciplines, however, are often only in charge of tutorials or are one of multiple demonstrators interacting with students one-on-one in laboratories. environments are far more conducive to learning students' names, personalities, and what they enjoy and struggle with. A large part of this is making the effort questions, ask remember and follow information, up later. Moreover, PGRs often only have one or two modules they demonstrate on per term, so they have far greater capacity to individually get to know students compared to professors who may be involved in lecturing hundreds of students across various courses.

As well as this, it is important to build relationships beyond the classroom: via digital communications with students, chatting to students while waiting to get into the teaching room, and even just saying hello in the corridors. PGRs can reply to digital communications – emails quickly, with less overwhelming inboxes than tenured staff (and, if we're being honest, a little bit of desire to procrastinate from writing our theses). I even found myself replying to Teams messages from students in one of my online classes during the pandemic, making myself available (within reason) to connect with and respond to students

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with queries and concerns. Making yourself reliably open and available builds a huge amount of trust. An increase in student-faculty interaction has been found to enhance learning and reflective thinking in the course and beyond (Pascarella and Terenzini, 2005); perhaps student-PGR interaction could improve these facets too.

One other benefit of forming these connections is the ability to learn about the students' academic lives throughout the university, and advocate for them with more knowledge of the systems for improving education. Once they are comfortable in the classroom, students often feel happy to share complaints about other classes or ways in which their courses were structured. This led to a lot of intriguing discoveries on my end about their undergraduate experience, having done undergraduate degree in a different subject at a different university. By speaking to my students, I learned that at my current university, different faculties and schools lead their modules in different ways, so cross-faculty undergraduate courses can complex interactions: for example, students on a particular course did not receive tutorials in some of their modules, although students on another

course did. Similarly, when students discussed the issue of field trips being hosted over religious holidays, it was something I was able to raise to our school's Equality, Diversity, and Inclusion (EDI) committee.

It should be noted that this article has been written with a bias from the perspective of a younger PGR; I began my undergraduate course at the age of 18 and commenced my PhD four years later, so my age is not far off that of most undergraduate students who go to university at 18. For mature undergraduate students I may not meet the near-peer teaching criteria, but perhaps similar relationships could be built with mature PGRs interacting with mature undergraduate students.

The Coronavirus pandemic has been and continues to be a global tragedy, and indeed, extremely challenging for teaching in many ways. Nevertheless, as a PGR, the mutual experience of a difficult university experience creates a understanding common between undergraduate students and their PGR tutors. The unique near-peer position of PGRs to many undergraduates means that this shared experience can be a powerful tool for building connections and trust with our students, a crucial dimension for effective learning.

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