Active student participation in teaching and learning research; Scylla and Charybdis or Euphrosyne and Eleos?

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ABSTRACT

CONTEXT

The Student Led Observation for Course Improvement (SLOCI) team was established in 2018 in the Faculty of Engineering, Architecture and Information Technology. Conceptualised on a hybrid students' as partners (SaP) ethos (Bovill, 20216; Bovill et al., 2017), it involves students as active participants and co-researchers (Abbeglen et al., 2021; Barrineau et al., 2019; Groundwater-Smith & Mockler, 2016; Waddington & Bonaparte, 2022) in teaching and learning. Its remit has expanded to include not only student representation and voice, but also student-based research into the student learning experience in engineering. Working in non-traditional ways and spaces in higher education poses unique challenges and tensions for both students and staff. Here we reflect on the roles of students and staff as co-researchers and the development of our practice across a range of teaching and learning (T&L projects).

PURPOSE OR GOAL

The SLOCI team has collectively engaged in over 20 different T&L projects relevant to engineering education. The purpose of this paper is to provide reflections, from the perspectives of the students and staff participants on their experiences of and the learning that resulted from engagement in these educational research projects. Our projects have developed from in-class observations to full engagement in educational research; including design, development, data collection, analysis, reporting and dissemination of findings. Given that the team has worked with many collaborators, it seems timely to reflect on the different ways that students and staff might perceive the impact of this work.

APPROACH OR METHODOLOGY/METHODS

Participants consist of students and staff or who have worked with the SLOCI team over the last 5 years. The methodology utilises collective autoethnography and thematic analysis. Semi-structured interviews and reflective sessions with participants (both staff and students) have been audio-recorded (with permission), transcribed and analysed to develop common themes that explore our own localised practice and development of knowledge. Further reflections and discussions with participants have resulted in a collective reflection of our practice and transformational learning for all team members.

ACTUAL OR ANTICIPATED OUTCOMES

This analysis will enable us to better understand the challenges and tensions experienced by student and staff collaborators operating in a changing teaching and learning (T&L) environment. A greater understanding of both student and staff perspectives will lead to better, more engaged and hopefully mutually beneficial outcomes for student learning. Guidelines for others working with students as co-researchers will be developed from this investigation.

CONCLUSIONS/RECOMMENDATIONS/SUMMARY

This research contributes to the students as partners and co-researchers literature by providing greater insight into the transformative potential of engaging students as active participants in T&L research. It will assist in identifying those areas where students feel most able to contribute to the research process, as well as those areas where students and staff feel that there are barriers to active participation.

KEYWORDS

Students as partners, autoethnography, thematic analysis

Introduction

This paper presents a reflective account of a Students as Partners (SaP) initiative conducted at the University of Queensland in the Faculty of Engineering, Architecture and Information Technology. The Student Led Observation for Course Improvement (SLOCI) team has existed since 2018 and has completed a range of teaching and learning projects in this time. The paper is presented as a reflective and autoethnographic account of the experiences of both the student partners and the staff involved in the project. The following paragraphs will provide an outline of both Students as Partners (SaP) in the wider literature as well as in Engineering Education; the use of ethnography in Engineering Education; and explain the motivation behind the title of this paper.

"Students as partners" (SaP) has over a decade of practice and research in higher education (Matthews et al., 2019). Cook-Sather et al., (2014) describe SaP as involving staff and students in conversations about teaching and learning in ways that involve shared responsibility. They further define it as a "a collective, reciprocal process through which all participants have the opportunity to contribute 'to curricular or pedagogical conceptualization, decision making, implementation, investigation, or analysis' (Cook-Sather et al., 2014, p. 7). SaP has also been seen as a way to develop more student-centred learning (Chan & Stacey, 2022). There is an emerging body of literature exploring SaP in the context of engineering education that mirror the projects and approaches used in the wider literature. For instance students are involved as "co-learners, co-researchers, co-inquirers, co-developers, and co-designers" (Healey et al., 2016).

In an engineering education context, Dunn et al., (2018) describe the effectiveness of learning resources created by higher year engineering and multimedia students to assist first years to see the relevance of mathematics to their future studies and careers. Caño de las Heras et al., (2022) describe the use of participatory design in the co-creation of a virtual laboratory in biochemical engineering. Brown (2018) describes the benefits for students as they engage in the co-creation of online learning resources for first year fluid mechanics students. Bourguet et al., (2020) describe a SaP project designed to teach materials science to students using VR and AR as part of a transnational education program. Other projects seem to embrace a Students as Partners perspective, despite not explicitly referencing this literature. For example, Hadgraft et al., (2017) describes an extensive student-staff partnership initiative designed to engage students and staff in decisions around assessment and curriculum that require active and authentic learning, blended and flipped classroom initiatives and collaborative learning. Hussain et al. (2019), describe the involvement of former students of a microelectronics course as co-creators in assessment design.

Despite the perceived benefits of SaP projects to students and staff, they are not without their difficulties. The original motivation for the title of this paper came from Barrineau et al. (2019), who refer to "working between Scylla and Charybdis" when discussing the challenges related to student-staff partnership work. The literature suggests that SaP work is described in universally positive terms without critically examining the role of partnership (de Bie, 2023; Bovill et al., 2016). De Bie (2022) advocates for a more activist, student-driven approach based on alternative politics that truly addresses student concerns in higher education. Partnership can however be approached in a more balanced way that acknowledges both the challenges and the positives (Barrineau et al., 2019). Hence the second part of this title, which references Euprosyne end Eleos; the goddesses of good cheer, and mercy (or compassion) and represents a more pragmatic or nuanced view of SaP. This is an approach that does acknowledges the potential for learning for both staff and student participants buy that does not gloss over the difficulties.

In contrast to most SaP initiatives, the SLOCI team operates more as a continuous collective. Although the SLOCI team is based on SaP approaches, it is enacted as a "process of engagement" (Curran. 2017) that benefits staff and students and involves both in ongoing personal and professional development through collective reflection (Kemmis et al., 2014) as they engage with new projects. Our practice is underpinned by a participatory action research (PAR) approach (Kemmis & McTaggart, 1988) (see Figure 1). SLOCI represents a disruption in the

traditional power dynamic in teaching and learning as students are engaged in exploring not only their own practice but those of the staff with whom they collaborate; that is they can enable staff and students to question the ***practice architectures***, or the way teaching and learning "***practices are constructed and contextualised***" (Kemmis, 2013, p. 58). Kemmis (2013) calls this the theory of practice architectures. It examines how what people say, do and how they relate to each other sustain practice traditions or the status quo of "business as usual. For a practice ot change therefore, "the sayings, doings and relatings, and the project of a practice must all change in relation to one another" (Kemis, 2013, p. 58). We have applied this theoretical approach to our own practice.

Figure 1 shows an application of PAR to the work the SLOCI team does with staff in the context of course review (e.g. reviewing a single subject in a degree or program). This figure indicates that the process is not linear (Dillon, 2008; McNiff, 2000).
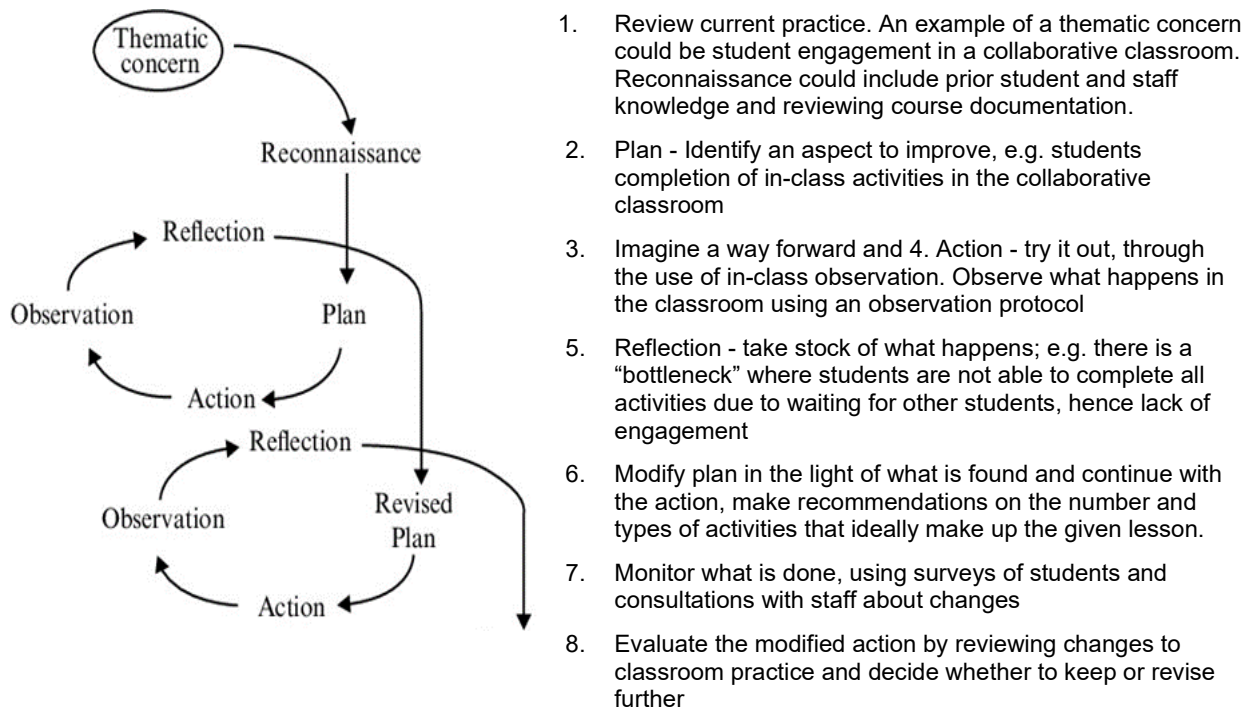

1. Review current practice. An example of a thematic concern could be student engagement in a collaborative classroom. Reconnaissance could include prior student and staff knowledge and reviewing course documentation.

2. Plan - Identify an aspect to improve, e.g. students completion of in-class activities in the collaborative classroom

3. Imagine a way forward and 4. Action - try it out, through the use of in-class observation. Observe what happens in the classroom using an observation protocol

5. Reflection - take stock of what happens; e.g. there is a "bottleneck" where students are not able to complete all activities due to waiting for other students, hence lack of engagement

6. Modify plan in the light of what is found and continue with the action, make recommendations on the number and types of activities that ideally make up the given lesson.

7. Monitor what is done, using surveys of students and consultations with staff about changes

8. Evaluate the modified action by reviewing changes to classroom practice and decide whether to keep or revise further

Figure 1. Elaborating the action research cycle (adapted from Kemmis and McTaggart (1998) with McNiff's (2000) stages relevant to in class course observation.

Ethnography, autoethnogaphy and collaborative ethnography (CAE) have a long history in social science research. Some examples of how these methods have been used in the engineering education literature are; to gain insight into the disconnection between education and practice (Moffat, 2018); to explore the development of an undergraduate civil engineering student's sense of identity (Welling et al., 2017); to reflect on graduate students' transitions to engineering education researchers. Ethnography has been described as a form of "qualitative narrative methodology" (Dyson, 2007, p. 36) that results in a "story" (Moffat, 2018). The intention of the "story", in this case is to shed light on the practices of the SLOCI team, in order to understand the learning that occurred for students and staff that worked and work in this team. The research is frequently written in the first person, using pronouns such as "I", "we", our" and "us".

The collaborative ethnographic (CAE) approach suited our motivation for exploring our own practice. The research questions for this study are:

RQ1: What can we (core members of the SLOCI team) learn from studying our own practice?

RQ2: How can this be applied to our own future practice and perhaps to the practice of others?

RQ3. What do staff learn from engaging with SaP, (in this case the SLOCI team)?

Methodology

This study utilises narrative interpretation drawn from auto- and collaborative ethnographic educational research (Keleş, 2002a and 2002b). This is used to study the emerging and developing practice of the SLOCI team. From a theoretical perspective, critical theory and pedagogy have also informed the approach that the SLOCI team takes to its practice. It is beyond the scope of this paper to go into detail about these perspectives on education, further information can be found in the work of Freire (1996) and Zambrana (2013). The data collected are from recollected conversations, interviews, my own notes, musings and emails with staff and student collaborators. These data collection approaches form the basis of research projects in both PAR and CAE (Kemmis, 2013). There have been 16 students involved with SLOCI since 2018. We currently have 4 student members (with a 5th about to start) and the same staff member has coordinated the team since 2018. In that time, we have worked with many staff on over 20 different T&L projects. All quotations have been de-identified; real names have been replaced with those from a random name generator to safeguard anonymity and confidentiality.

Results

Using the theory of practice architecture, key aspects of the teams practice have been analysed and are reported below. SLOCI was originally created to obtain unfiltered feedback about courses and programs from students. The team's early projects and key quotes are listed below in Table 1. We demonstrate a change in practice with regards to focus groups. For instance, we initially planned to run a focus group in swot vac because it suited our schedules The **Joint Student Summary** shows development of practical knowledge over time.

Table 1. Creation and early adoption of SLOCI. Development of practice in 2018

Elements of practices	Practice architectures within the team
Project	*Practice landscape*
Initial creation of SLOCI based on SaP approach. This was designed to create a more equal dialogue between students and staff about the teaching and learning experiences and provide timely, actionable feedback within a course.	The student members of the SLOCI team and the staff coordinator of SLOCI meet, weekly initially in order to learn about T&L terminology, to plan how to do the work and to get to know each other.
Examples of sayings (communication in semantic space	*Examples of cultural-discursive arrangements*
The group developed a language appropriate to the type of T&L work they will be doing. I worried that the jump from more "objectivist" engineering study to the "subjectivist" paradigms in education would challenge the group and devised training materials to support their new roles.	The group reviewed course materials, read selected T&L literature. They also began to challenge established T&L practices, such as the structure and density of course documentation, how students would best make sense of it and established classroom practices in large lecture theatres.
Examples of doings (activities)	*Examples of material-economic arrangements*
We developed an approach to meetings and working together. In some instances, where I was unable to attend a meeting, the team ran the meeting on their own	The team created an online folder to share projects in progress (e.g. course reviews). They also learnt about the importance of timing when it came to gaining student input from focus groups.
Key quotes ***Staff quotes*** The feedback is really excellent. I have never had the advantage of this type of detailed information before. It will take me a while to go through it, but my first thoughts are that a few tasks students liked, I thought from observing the class that they really didn't like them. ***Henry (Course coordinator in response to receiving the completed course review)***	

I now have a greater insight into the challenges faced by the two cohorts of students in my course *Prentice (Course coordinator)*

Student quotes
"No students turned up to the focus group. Obviously scheduling a session during swot vac doesn't work".

August

For a student-staff engagement project, students and staff share responsibilities in creating a better university experience. Students act as the bridge of communication between the cohort and staff, to explore, develop and deliver improvements based on identified student needs. *(Joint student written summary from all 4 original student team members)*

It's been crazy seeing how SLOCI started from nothing, we slowly figured things out as we go, until now a much bigger and more recognised team. There were definitely some ups and downs we've been through. Back in 2018 we used to have a lot of late night meetings trying to align our goals within the group, some passive-aggressive discussions on how we would like to do things. All these are because we have the passion in making SLOCI better and stronger. Mercer

These statements reflect that the team took time to coalesce and to learn how to work together, at the same time they were starting to gain recognition in our institution. There is also the development of professional responsibility in the form of knowledge and declaration of a perceived conflict of interest when reviewing a course, the student was enrolled in.

Table 2. Ongoing SLOCI projects – development of practice in 2019

Elements of practices	*Practice architectures within the team*
Project	*Practice landscape*
SLOCI collaborated with the central Information Technology Services (ITS) unit as well as central Student Representation and Voice (SRV) to work on their SaP projects	The SLOCI team now meet weekly with ITS staff and students to work on a variety of technology related projects that impact students (and staff).
Examples of sayings (communication in semantic space)	*Examples of cultural-discursive arrangements*
The conversations in the SLOCI team now mostly revolve around the team discussing how to resolve issues with eh ITS and SRV projects	The SLOCI team are realising that they have more knowledge of how to conduct small scale T&L projects than the other students they work with in the ITS and SRV teams.
Examples of doings (activities)	*Examples of material-economic arrangements*
We develop "just in time" approaches to training ourselves that we can then transfer to the ITS and SRV students	Meetings with ITS and SRV students and projects are run by the students within SLOCI. They are receiving some additional project income from this work that then is used to pay them for their time.

Key staff quotes
"How was I not aware of the existence of SLOCI before now? This is a great initiative" *Joey (representative from Central Student Recognition and Voice)*
The SLOCI students were great at helping our students formulate surveys, focus groups, guerrilla testing and how to present findings
Key student quotes
I am currently enrolled in COURSE107, so I might not be able to take part in the course review. I'm happy to help the team with training and observation practice, as a behind-the-scenes helper but I don't want to do the wrong thing by the project *Winford*

Further reflection on practice and learning from student members of SLOCI revealed that they had developed an awareness of the skill sets that they had developed over time. Several key additional quotes are:

When I first started with SLOCI, I guess my motivation was a little bit self-centred. I saw it as an excellent opportunity to develop my own skills. So, working with other people, developing my self-confidence in communicating all of that. As time has gone one, what I have gained the most from is my ability to represent other students. That is what I have enjoyed the most.
Hunter

I've realised that we know so much more than some of the other students (IT SaP project). We're able to help them and I'm not sure how easy the project would be for them if they couldn't talk through things with us. They expect a lot from them. **Mercer**

Table 3. Current SLOCI projects

Elements of practices	*Practice architectures within the team*
Project	*Practice landscape*
First Year Review Students use of generative AI	The SLOCI team had a variety of new projects. A timely one was the project on generative AI
Examples of sayings (communication in semantic space)	*Examples of cultural-discursive arrangements*
The more experienced members of the team (from 2022, discuss previous ways of working and knowledge from previous projects with the new students.	The student members of the team inform me about how they use generative AI which we are able to build into a survey to use with other students
Examples of doings (activities)	*Examples of material-economic arrangements*
New team members develop new ways of working together. Students leaving the team become aware of the skills they have developed through practice	Meetings now occur principally via Zoom (a change initially due to COVID).
Key student quotes *If I were to give advice to any incoming SLOCI team member, it would be to learn as much as you can from the existing or outgoing team members before they are gone. Once they've left, the reengagement with the team tends to be sporadic at best because they've moved on to other things.* **Hunter** *All they wanted to know about during my job interview was about my experience with SLOCI. They wanted to know about how I could work with other people.* **August** *SLOCI has taught me a lot of things that I would never have learned by attending classes - I learned to be a lot more organised, learned to identify people's strengths and weaknesses, and that there isn't always a rule to things (unlike engineering) - you gotta trust what you believe is right and make it happen.* **Mercer**	

Discussion and Conclusion

When SLOCI first started, we were busy "doing" partnership, learning as we went and muddling through, however it became clear that this wasn't enough. The partnership has taken on a much more reflective tone as we seek to place ourselves both alongside and in contrast to other institutional partnership practices. Utilisng PAR, CAE and the theory of practice architectures, we have begun a more in-depth exploration of our own practices. It also became a necessity as students graduated and left the group and our projects changed in nature and scope, as we needed to consolidate the team's learning and ensure that new team members were supported. This has encouraged us to adopt collaborative reflection as part of our ongoing practice.

Chan and Stacey (2022) refer to "desirable difficulties" (or the Scylla and Charybdis of Barrineau et al., 2019) inherent in partnership. As can be seen from the student quotes in the previous section some of these difficulties relate to adapting to working in new teams, adapting to new roles, and in some cases the personal growth and realisations that accompany this process can be challenging to students as it causes them to question and reflect in new ways. Additionally

knowing how to engage with academics and a range of staff, as well as how to schedule a team with competing priorities are consistent and ongoing issues in any partnership project. Convincing staff of the value of partnership both to themselves, to their courses and current students is still a challenge, despite the inroads that the SLOCI team has made. Even when staff are on board with partnership, expectation management can be an issue. These are issues identified by Bovill (2017) as well as others (Bovill et al., 2016; Cook-Sather et al., 2014).

Positive outcomes (or Euphrosyne) for students and staff working in SLOCI mainly relate to the growing self-awareness of development of skills amongst the team (although this can also be seen as troublesome to start with). The ability to pass on knowledge in the form of procedures, reports, know-how and practical guidance between team members is extremely valuable and something that students come to realise over time. They also value and relate to the camaraderie that stems from spending a sustained amount of time with a group of people and feeling that the team is a "safe space" to discuss their feelings (see comments about the impact of COVID for example). This feeling, in part stems from building the project along the SaP values espoused by Cook-Sather et al. (2016). It is an inherent part of our practice architecture.

The practices of the SLOCI team have shifted over time as both the team composition and nature of the projects has changed (Healey & Healey, 2018). We have also realised as new students have joined the team and graduating students either graduate or move onto other endeavours, that we need to plan for that transition more deliberately. We had already put in place a shadowing or mentoring practices for new students, but this has been augmented by a project handover phases and better storage of documentation. Our disparate processes, procedures, reports and other documents are now in one shared drive available to all current team members.

In summary, given the complexity and challenges of Students as Partners work, what do I ultimately think about it? The team has been difficult to sustain due to changes in funding. But there is also positivity associated with successful outcomes, new learning within the team or successful project completion. Seeing more experienced members of the team sharing knowledge with newer team members demonstrates the value of the structure of this team, even if it is not built on the more common SaP models of semester long projects. There is also the bittersweet recognition that as the students grow into the roles over time, they ultimately leave the team.

Perhaps a better question is what do the students think about it? All the students involved in this study have expressed a degree of development, either relevant to professional practice or personal understanding. They have also grappled with the discomfort of working in a multidisciplinary team on multiple projects with a steady succession of team members. I think these quotes from three former SLOCI team members sum up the students' views:

"There were frustrating times when I felt so lost and doubted myself so much, there were more times when things went well and I was like, hell yes good job team!" **Mercer**

"It (SLOCI) has been a long time running and yeah, with the virus that shall not be named really messing with the time over the last few years. Despite those shenanigans, I've always been proud to be a part of SLOCI and what it's become." **Hunter**

On balance and reflection (the Eleos of SaP), there is a great opportunity for both students and staff to develop their reflective capacities Lubicz-Nawrocka, 2018) through involvement in partnerships such as SLOCI. I would encourage all staff to attempt a SaP project at least once. This should be done with the expectations that not every part of the project will proceed as planned or expected. The PAR framework supports working in this way, as it supports critiquing the context, policies, and learning environment in which our practices have emerged.

This paper is a contribution to the literature exploring localised and contextualised approaches to SaP. It also contributes to the emerging SaP engineering education literature. It provides additional evidence on the benefits of SaP to students and staff through its exploration of the development of shared practices within a longstanding partnership framed according to PAR principals and incorporating the theory of practice architectures. Given the (relative) longevity of

the team (more than 5 years), our approach to working, the range of projects we have worked on, the varied experiences of SaP and our desire to share (SaP) practices with a wider audience, we adopted a CAE approach to understand what we had learnt through our project and partnership experiences in SLOCI.

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