

CASE STUDY

An agile approach to co-creation of the curriculum

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ABSTRACT

The importance of developing meaningful student engagement through partnerships is an increasing area of interest and practice within the context of learning and teaching in higher education. This case study reports on an approach used in a co-created curriculum project that aligned the values and principles of student-staff partnerships with those of an agile framework. Through an analysis of the individual team reflections captured during and after the project, the study explores how the agile approach could help address imbalances of power between students and staff in higher education. The results of the study show that team members found that working in this new way increased confidence in co-creating teaching and learning with staff and fostered a positive team relationship, although some reflections indicate that assumptions of power are deeply embedded within the structures and roles of higher education. However, our findings suggest that this way of working can result in positive experiences for students and staff and could be applied to a wide range of student-staff partnership projects.

KEYWORDS

students as partners (SaP), co-creation, agile teamwork, curriculum development

In October 2019, the authors were approached by an academic with an idea to develop a short open-access course on antimicrobial resistance (AMR). The academic suggested recruiting student volunteers to develop the course in a kind of hackathon approach. A hackathon is a development event, often used in computer programming, to develop a piece of functional software at the end of a short period (commonly 24 or 48 hours). The academic hoped that the students would be able to develop the open-access course as an extracurricular activity in 24 hours over an extended period and could log the hours through the university's volunteering scheme. We believed this would be a great opportunity to work on a project-based partnership with students as defined by Mercer-Mapstone & Marie (2019); however, we felt we needed to establish a way of working that would facilitate effective team working and maximise staff and students' time over the 24 hours.

After reviewing some of the key literature around student partnerships, we recognised that the values and principles documented in the literature were similar to those

which underpinned agile methodologies (Agile Alliance, 2019). “Agile” is an umbrella term covering a range of methodologies and frameworks which adopt an incremental, iterative approach to development (Davies & Mueller, 2020). One of the key differences of agile development to the more traditional, defined process approaches is the focus on early inspection and testing to identify incremental improvements to a product. This is achieved through processes that encourage transparency, honesty, and reflection. There are several popular agile frameworks, each with their own principles and practices. However, to be defined as agile, a framework should embrace the values and principles of the Agile Manifesto, which include courage, focus, commitment, openness, and respect for and trust in the team (Agile Alliance, 2019). These values and principles also align with those of student partnerships, most notably respect, reciprocity, and responsibility (Cook-Sather et al., 2014).

We work in a multidisciplinary team of public health specialists and data scientists and adopt agile approaches to projects, where applicable. Therefore, we were already aware of the benefits of agile, particularly its people-centred principles where inspection, reflection, and adaptation inform continual improvement.

We wanted to promote a team-based approach to the curriculum development project, where no individual was perceived as “the expert,” in an attempt to align with the values and principles of student partnerships and co-creation (Healey et al., 2014; Matthews, 2017). The iterative, reflective nature of agile methodologies appeared to be a good fit and was similar to other reflective practice models adopted by many educators (Finlay, 2008), encouraging both “reflection-in-action” (Schön, 1983, pp. 49–69) and “reflection-on-action” (Schön, 1987, p. 31). We believed that adopting a reflective and inclusive team-based approach could not only improve the process of partnerships, but also demonstrate improved project outcomes and outputs.

Our analysis of agile methodologies and student partnership principles resulted in the development of an approach we believed could enhance team-based partnership projects and address some of the key challenges presented in the literature around traditional higher education roles and power structures, particularly between staff and students (Matthews, 2017). This project also presented an opportunity to work collaboratively with students where the principles of respect, reciprocity, and responsibility take precedence and challenge the growing perception of “students as consumers” (Cook-Sather et al., 2014, p. 7) in higher education (HE).

One clear benefit of an agile approach was the importance of reflection, particularly on the process of working in partnership (Healey et al., 2014; Bovill et al., 2011). Reflective practice is built-in to agile processes; therefore, it seemed to align with the recommendations we found in the literature and also presented a useful method to capture qualitative data for evaluating the approach.

IMPLEMENTATION

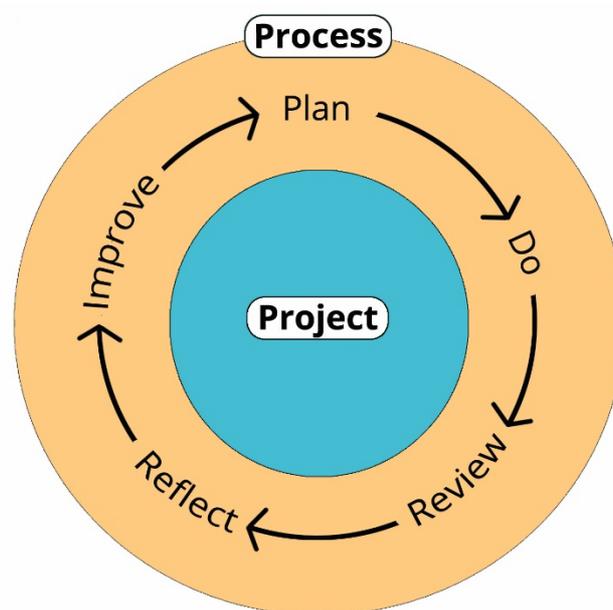
Micro-sprints

Our initial research into student partnership practice (see, for example, Cook-Sather et al., 2014; Bovill, 2014) indicated synergies with an agile framework called scrum (Scrum.org, 2020), which is centred around teamwork and accomplishing a goal within a set amount of time called a sprint. Sprints are time-bound events that usually last between 1 and 4 weeks, and a typical project will consist of several sprints.

Each sprint follows four distinct events:

- Plan: Set the goal for the sprint and identify what needs to be done to develop something useable.
- Build: The team work on the current sprint tasks to achieve the overall sprint goal.
- Review: The team and relevant stakeholders review the sprint tasks to determine whether they are “done” or whether they require further improvement.
- Retrospective: The team reflect on the current sprint to improve the process for the next sprint.

Figure 1. Micro-sprints



Due to the availability, timetables, and conflicting priorities of students and staff, we felt that the normal sprint time frames would be problematic in an HE setting. Therefore, we developed an adapted approach that we named micro-sprints (see Figure 1) to facilitate co-creation of the curriculum (Bovill et al., 2016). Micro-sprints are underpinned by the values of partnership and the agile framework, scrum. They follow the four sprint events, which are completed within 3-hour blocks, scheduled weekly outside of the students’ formal studies. Micro-sprints end with the retrospective event (that we will now refer to as the reflect event), where the team reflect on the current sprint and identify what went well and where improvements could be made in the process with the aim of improving the next sprint.

Agile team roles

The team consisted of eight undergraduate students from a range of disciplines and a biological sciences graduate intern, a learning technologist, a public health lecturer, and a lecturer in technology-enhanced learning. In contrast to the traditional HE roles of academics, professional service staff, and students, the team adopted scrum team roles and titles in a conscious effort to remove hierarchical norms and address potential power dynamics within the team (Matthews, 2017). Scrum team roles include:

- Product owner: A product expert who represents the client and is responsible for continuously communicating the vision and priorities to the development team.
- Development team: A group of professionals who deliver the product and are responsible for self-organising to complete work, having autonomy and responsibility to meet the goals of the sprint.
- Scrum master: Acts as a facilitator who ensures the scrum events are followed.

The academic who had the original idea for the course was regarded as the “client.” The client provided the overall vision and requirements for the course. The students, graduate intern, lecturer, and learning technologist became the development team, to self-organise in a non-hierarchical way, contributing different skills and perspectives to the project to deliver the requirements of the client through the micro-sprints. The client was not present at every sprint and the day-to-day project decisions were made by the development team, which were then communicated to the client via the product owner (the graduate intern) for iterative feedback. The absence of the client in sprints established that the academic was not in total control of the project direction and decisions. Due to the shorter timescale of micro-sprints, the scrum master role wasn’t essential—the team took responsibility to ensure the micro-sprint process was followed. The team also negotiated how best to accomplish the work openly and transparently, with all participants having the opportunity to “contribute equally, although not necessarily in the same way” (Cook-Sather et al., 2014).

DISCUSSION

We now discuss the individual reflections of the team, including the weekly (micro-sprint) reflections and the final reflections of the overall project, which were captured anonymously through two forms, one for students and one for staff, so that we could identify the student voice in the analysis. This discussion considers the strengths and weaknesses of the agile approach and identifies the themes that emerged from these reflections.

Weekly reflections

Throughout the project, the team provided weekly sprint reflections as part of the reflect event of the micro-sprint. The sprint reflections were captured anonymously using an online form and asked two questions—“What went well?” and “What didn’t go so well?” The purpose of the weekly reflections was to make continual improvements to the process and to refine the approach in a safe, collaborative environment. The reflections informed the sprint actions, which aimed to help the team make incremental and positive changes to the sprint process.

The sprint reflections and consequential actions proved to be an effective method for making continual improvements to the process as well as potentially addressing any power imbalances in the team dynamics. For example, after the first sprint, the weekly reflections highlighted that some team members “were very quiet” and that “it would be good to find a way of everyone feeling comfortable enough to contribute to the discussion so that it's not dominated by a few people who are speaking.” Based on these reflections, several sprint actions were introduced to bring everyone into the discussions. They included a dedicated online channel for communication within the current sprint for the less

confident team members and reassuring the team at the start of the second sprint that the micro-sprint is a safe, collaborative environment where all opinions are valued and that there is no such thing as a silly question. In the weekly reflections for sprint 2, the actions demonstrated a positive change to the team dynamics, which is evident in comments like “Good to hear everyone’s opinions with everyone listening and engaging” and “Lots more contribution!! Almost everyone contributed I think.” It was very encouraging to see that we were able to effect change quickly and make the students feel that they were fully included and valued during the project. Quite often, we don’t get feedback from students until the end of a process (e.g., via a course evaluation) where it is often too late to make any effective changes. Working in an iterative way to make constant improvements to the process appeared to have a positive impact on the team.

It took a concerted effort for the staff to adjust their language and terminology in the early stages of the project. For example, during the design element of the project, staff were using the acronym ILO (intended learning outcomes) and terms such as constructive alignment when talking about curriculum design, and some students had to ask for an explanation of these terms. However, this example made staff more conscious of their language to ensure inclusivity and transparency for all team members. Being careful with our use of language seemed to enhance team cohesion. The concerns around language and power reduced as time went by, whether it was through a conscious effort or simply through team bonding over the course of the project. Interestingly, we decided to use the word “team” from the outset, instead of explicitly discussing and labelling student and staff roles within the team. The word “team” implies inclusivity by definition, and we anticipated that it would have a positive outcome on potential power imbalances within the team.

Providing an open platform to express views and opinions demonstrated that everyone had an equal part in the process, contributing to team effectiveness and promoting a safe learning environment. Not all team members were as experienced or as confident in critically reflecting as others. It took practice and confidence to be honest about the process and how the team were progressing. However, the quality and openness of the reflections improved over time. Again, this could be attributed to the transparent and dialogic nature of the agile process we adopted, which can require a change of mindset for individuals, teams, and organisations, if it is to be truly effective.

In critiquing Schön’s (1983) notion of reflection-in-action, Eraut (1994) states, “when time is extremely short, decisions have to be rapid and the scope for reflection is extremely limited” (p. 145). This became clear to us early in the project, as we noticed most students weren’t experienced in reflecting, and the limited amount of time we allocated to this resulted in short, quick reflections from some students, rather than the critique and depth we were expecting. In our own reflections, we concluded that the students might have benefited from an introduction session on how to reflect, which is something we could implement in future projects. Students might also have been reluctant to be more critical in their early reflections (even though they were anonymous), as they might have been fearful of exposing their identities in a newly formed team of students and staff where team bonding had not yet developed. This reluctance could also be attributed to threshold concepts in pedagogical partnerships (Cook-Sather et al., 2019), where students might have felt uneasy about contributing their perspectives in an environment where the concept of power sharing was yet to be established.

However, as the project progressed and team cohesion strengthened, the quality of students’ reflections improved as their confidence increased and trust in the team grew.

Final reflections

After completion of the course, the team reflected on their experience of the overall project by responding to the following questions: “What went well?”, “What didn’t go so well?”, and “How could the process be improved?” One key theme to emerge from the reflections was the increased confidence of students in co-creating with staff. For example, one student commented: “The atmosphere was the best thing about the entire process. Being able to work with lecturers and staff so easily and openly really helped create an environment where I felt my thoughts and opinions were valued.” And another student felt “as though I could speak to the staff in the same manner as I could speak to the other volunteers, which is what I think made the project a success.”

Interestingly, some students commented that their confidence in co-creating with staff developed throughout the project. For example, one student commented: “Initially, there was a general feeling of apprehension across the group when it came to engaging in discussion. However, this challenge soon dissolved over time as team ethos accumulated.” Another student commented: “Towards the start of the course I felt apprehensive about sharing opinions and ideas with the rest of the group, however this faded as the course progressed until I eventually felt confident to discuss ideas.”

This may be because the students felt more comfortable over time as the project progressed, but also it is clear from the comments that students’ confidence in working with staff improved during the project and that they felt able to openly contribute. It also demonstrates that the agile, reflective approach fostered a positive team relationship and helped address the hierarchy and norms of traditional roles in higher education.

Another theme to emerge from the reflections was the overall positive nature of the whole experience. Two of the students commented that the process had been one of their “best experiences” since joining the university. One student commented:

Working on the course was one of the best experiences I had in my first year of uni. Everything about this experience was unfamiliar—from working alongside university staff to developing an open-access online course. It was uncharted territory for me and exploring it was challenging, exciting, and constructive.

Other students spoke of the value and reward gained from the overall experience. One explained, “I believe that I have gained valuable experience which I will carry forward to future work.” Another commented: “Overall being involved in the project has been a really enjoyable and rewarding experience.”

This demonstrates further positive outcomes of the project, particularly in the broader context of the student experience of higher education. The insightful range of student reflections demonstrates the wider impact of the project, particularly towards student engagement with teaching and learning processes, and suggests the students also developed confidence in communicating, teamwork skills, and practical application of agile working practices. Additionally, it has also been encouraging to see that students have taken the approaches learnt in the project and applied them into their own contexts and practices. One student used the project as an example of teamwork in a job interview, and another student wanted to apply the agile approach to the development of a new university course she was working on. This demonstrates that students felt empowered by the experience.

Staff reflections followed similar themes of confidence, trust, and positivity. Looking back on the project, one colleague wrote:

I'm used to leading and developing things on my own. I had to learn to let go of the reins, to appreciate other ideas and directions, and to learn when I did need to step in or be firm about one or two aspects of the brief. They [students] were not my assistants, but people with as much voice and opinion as others in the team, with as much right to ideas and direction for the course.

This indicates a positive shift in power and acknowledges the need for respect, reciprocity, and shared responsibility (Cook-Sather et al., 2014). Another colleague described how

there was an initial feeling of entering the unknown and I had no idea how the project would evolve and whether we could work together as a true team, rather than a group of staff and students. . . . Watching the students develop their skills and confidence throughout the project was very rewarding and gave me the feeling that we were doing something right.

The overall reflections of the team suggest that the micro-sprint approach fostered open and transparent team working practices, developed personal confidence and trust, and exposed and somewhat addressed perceptions of power within the team.

CONCLUSION

This case study demonstrates an effective approach to project-based partnerships, informed by agile and reflective methods for teamwork. The team reflections captured during this project suggest the approach can help address power imbalances between students and staff in higher education. However, it is important to acknowledge that this conclusion was reached by the authors who are both members of staff. Although we have aimed to represent the student voice and perspective throughout this case study using their reflections, the case study was not co-authored with students. We recognise that there are limitations to this decision and that a co-authored paper might reveal further insights into power imbalances between staff and students and that it is something that could be explored further. However, the authors feel that they were able to confidently arrive at these conclusions based on the student voice captured throughout the project via the weekly and final reflections.

The reflections also highlight that this way of working increased confidence in co-creating teaching and learning with staff and fostered a positive team relationship. There were also unintended positive outcomes identified through the reflections, such as enhancing the broader student experience of teaching and learning, as well as the practical application of skills in a real-world context. Staff also benefited from this approach, and the reflections demonstrate a paradigm shift in ways of working with students that lasted beyond the project timeframe. However, the reflections suggest that assumptions of power are deeply embedded within the structures and roles of higher education, and although this project set about to disrupt these assumptions, it was difficult to change the traditional mindset of both students and staff within a short timeframe.

Nevertheless, this way of working can result in positive experiences for students and staff and could be applied to a wide range of student-staff partnership projects. A further

outcome of this project resulted in the launch of a new blog publication (Owen & Wasiuk, 2020) that presents a range of reflections and case studies from students and staff working together on partnership projects and examples of how partnerships embedded into the curriculum can enhance the student experience.

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John Owen is a lecturer in technology-enhanced learning and teaching fellow at The University of Manchester and teaches on the Master of Public Health programme.

Catherine Wasiuk is a lecturer in technology enhanced learning at The University of Manchester. They have a particular interest in open education, micro-learning, and student-staff partnerships in learning and teaching.

ACKNOWLEDGEMENTS

With thanks to the project team for their reflections—Dr Roger Harrison, Caitlin Greenland-Bews, Aliye Ucoz, Chelsea Johnston, Chong Tian Xiong, Chryso Kompou, Daniel Beales, Krystel Fernandes, Olivia Gregory, and Tanya Mwamuka.

REFERENCES

- Agile Alliance. (2019). *What Is Agile?* <https://www.agilealliance.org/agile101/>
- Bovill, C. (2014). An investigation of co-created curricula within higher education in the UK, Ireland and the USA. *Innovations in Education and Teaching International*, 51(1), 15–25. <https://doi.org/10.1080/14703297.2013.770264>
- Bovill, C., Cook-Sather, A., & Felten, P. (2011). Students as co-creators of teaching approaches, course design, and curricula: Implications for academic developers. *International Journal for Academic Development*, 16(2), 133–145. <https://doi.org/10.1080/1360144X.2011.568690>
- Bovill, C., Cook-Sather, A., Felten, P., Millard, L., & Moore-Cherry, N. (2016). Addressing potential challenges in co-creating learning and teaching: Overcoming resistance, navigating institutional norms and ensuring inclusivity in student-staff partnerships. *Higher Education*, 71(2), 195–208. <https://doi.org/10.1007/s10734-015-9896-4>
- Cook-Sather, A., Bovill, C., & Felten, P. (2014). *Engaging students as partners in learning and teaching: A guide for faculty*. Jossey-Bass.
- Cook-Sather, A., Bahti, M., & Ntem, A. (2019). *Pedagogical partnerships: a how-to guide for faculty, students, and academic developers in higher education*. Elon University Center for Engaged Learning. <https://www.centerforengagedlearning.org/books/pedagogical-partnerships/>

Davies, A., & Mueller, J. (2020). Project development methodologies, management and data modelling. In A. Davies & J. Mueller (Eds.). *Developing medical apps and mHealth interventions* (pp. 25–73). Springer.

Eraut, M. (1994). *Developing professional knowledge and competence*. Falmer Press.

Finlay, L. (2008). *Reflecting on 'reflective practice.'* Practice-Based Professional Learning Paper 52. The Open University. <http://oro.open.ac.uk/68945/1/Finlay-%282008%29-Reflecting-on-reflective-practice-PBPL-paper-52.pdf>

Healey, M., Flint, A., & Harrington, K. (2014). *Engagement through partnership: Students as partners in learning and teaching in higher education*. Higher Education Academy. <https://www.advance-he.ac.uk/knowledge-hub/engagement-through-partnership-students-partners-learning-and-teaching-higher>

Matthews, K. E. (2017). Five propositions for genuine students as partners practice. *International Journal for Students as Partners*, 1(2), 1–9. <https://doi.org/10.15173/ij sap.v1i2.3315>

Mercer-Mapstone, L., & Marie, J. (2019). *Practical guide: Scaling up student-staff partnerships in higher education*. Institute for Academic Development, The University of Edinburgh. <https://www.ed.ac.uk/institute-academic-development/learning-teaching/staff/student-engagement>

Owen, J., & Wasiuk, C. (2020). *Student and Teaching Engagement Through Partnerships*. <https://medium.com/student-teaching-engagement-through-partnerships>

Schön, D.A. (1983). *The reflective practitioner: How professionals think in action*. Temple Smith.

Schön, D.A. (1987). *Educating the reflective practitioner*. Jossey-Bass.

Scrum.org. (2020). *The scrum guide*. <https://www.scrum.org/resources/scrum-guide>