CASE STUDY

Engaging with students as partners in education-space design

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ABSTRACT

Engaging with Students as Partners (SaP) in areas of curriculum design and pedagogic consultancy is relatively well established. Here we present a case study of two recent projects at Imperial College London, a research-intensive science, technology, engineering, mathematics, and medicine (STEMM) university, that have extended the SaP model to the design and delivery of modifications to education spaces. Using a research-informed approach and tested method ensured that the students remained active throughout the "twists and turns" of the project, rather than the more traditional snapshot student-consultation approach often taken early in the design process. Students experienced authentic partnership with staff, the space, and their department/institution more broadly whilst staff acknowledged that the quality of outputs significantly exceeded expectations at a fraction of the cost of engaging external design consultants. More broadly, projects such as these establish precedents for a more ambitious institutional approach to working with students as partners.

KEYWORDS

Students as Partners in space design, transitional education spaces, informal learning spaces, student ownership, student belonging

Students-as-Partners (SaP) practice has been categorised through a conceptual model by Healey et al. (2014) as occupying one of four spaces: learning; teaching and assessment; curriculum design and pedagogic consultancy; and subject-based research, or scholarship of teaching and learning. While Healey et al. (2016) acknowledge overlap and the interconnectedness of these domains, there is limited literature around how Students-

as-Partners practice can be integrated into wider institutional structures and processes beyond the typical partnership activities described in the conceptual model.

In the UK, capital spending on buildings by universities is approaching £3bn annually (Temple, 2018). Much of this spending will be on large projects requiring architectural expertise; nevertheless, significant spending on smaller projects to redevelop education spaces is also inevitable. Given the capital investment in education spaces, it is timely to question what level of student engagement, participation, and partnership in these projects could and should be possible. Additionally, the COVID-19 pandemic accelerated the questioning of what university campuses are for and how they support students. As more courses adopt online and blended approaches (Ali, 2020), traditional education spaces are increasingly mismatched to how students learn post-pandemic, driving demand for more flexible and informal education spaces (Valtonen et al., 2021). Given the emergent nature of this shift, students are particularly well placed to contribute their experience of how they learn to the design of new education spaces on campus.

The existing literature is scant in terms of engaging students as partners in space design in higher education settings, with Martens et al. (2019) distinguishing between design-based research, participatory design, and co-creation. Casanova et al. (2018) adopted a participatory design process with students and staff participating in "sandpit" focus groups (Frohlich et al., 2014) in which partners facilitated creative design with participants. Whilst this was effective in generating ideas and key design considerations, the participants had limited agency over the final design outcome. There was no assurance that student recommendations would not be ignored, adjusted, or reinterpreted at a later stage of the project.

At Imperial College London, educational infrastructure investment was already underway as part of a broader strategy. Alongside this, the development of a Students-as-Partners programme (StudentShapers) demonstrated the value and potential for staff to engage in partnership with students. Typically, projects were focused within the disciplinary context of staff and students through curriculum development and scholarship of learning and teaching. However, the development and refurbishment of informal education spaces (Boys, 2011; Deed & Alterator, 2017) was a key area in which student expertise could also be valuably engaged.

In this contribution we present a small-scale pilot project and larger main project in which the students were given much wider agency and a blank canvas on which to undertake the design. Crucially, students would be part of the project through to the point of selection and orders for implementation (e.g., furniture, equipment, etc.) so that the student participation was carried through to the ultimate delivery of the project. Students were also financially supported to promote inclusivity and equal opportunity for participation across their community (Mercer-Mapstone et al., 2021). The pilot study enabled the development of a working model for space design projects in the institution, which is described and reflected upon in more detail below.

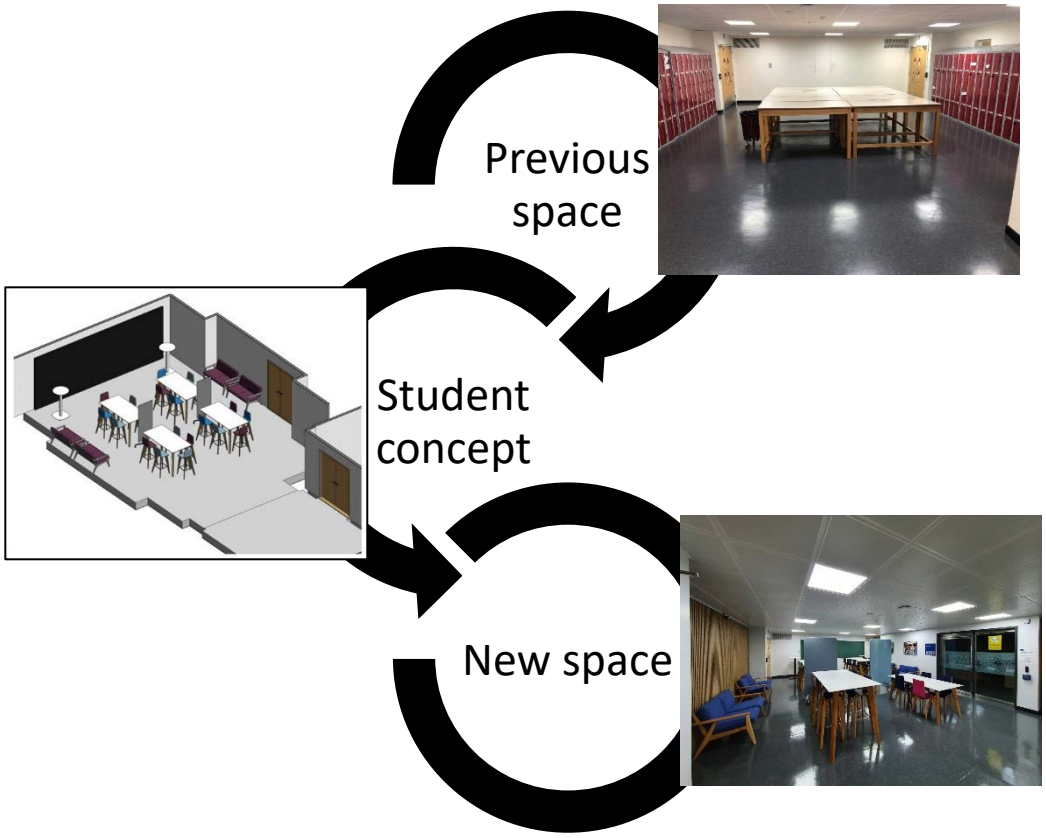
PILOT PROJECT

Following institutional education strategy and reinforced by the students' union recommendations, locations were identified in the case institution's Department of Physics that were educationally "unproductive" in their existing form and could be loci of informal study, collaboration and spaces which support student transitions into and out of the adjacent formal spaces (Nassar & El-Samaty, 2014). Informal education spaces will feature more prominently in future teaching and learning environments where a broad range of learning activities are undertaken by students (Carnell, 2017; Oblinger, 2006; Temple, 2018). Examples of informal education spaces include large atria, wide corridors, and non-silent study areas of libraries. Areas with proximity to formal study areas, such as lecture halls, can be productive as "eddy spaces" (Riddle & Souter, 2012) in which students can dwell to complete small tasks, interact with one another, or consolidate recent learning in formal settings.

The initial pilot project focussed on a silent study corridor and small foyer between two large (100+ seat) lecture theatres. Existing furniture (Figure 1) did not support educationally productive transitional space; this was empirically evidenced as part of a mixed methods PhD project that evaluated the foyer and one of the adjacent lecture theatres before and after refurbishment (McCrone, 2021).

The pilot project was undertaken and largely completed (Figure 1) just before the COVID-19 pandemic. A key learning from the pilot project was the necessity to manage both student-partner and wider student-community expectations around timescales for implementation, which are often longer than students typically anticipate. The pilot project was small in scale, with one student partner undertaking the project over the summer vacation, and demonstrated that additional student partners would have enabled a broader student expertise base to be inputted into the project across year groups and study modes. The pilot project served to shift operational staff perspectives on the high-quality outputs students produced when given appropriate tools and when engaged in authentic partnership and with appropriate, structured freedoms. This was key to making the case for larger and more ambitious space design projects.

Figure 1. Overview of part of the pilot space design project



MAIN PROJECT OUTLINE

Following successful completion of the pilot, a more ambitious project was launched that focussed on foyer areas outside a large (260+ seat) lecture theatre over two floors of the same physics building. This developed our ongoing working model for staff-student partnership in space design. Additionally, the space was a main focal point of disciplinary identity as well as a thoroughfare to other buildings and had several historical artefacts and displays to consider.

The staff-student partnership literature recognises the need to acknowledge the range and forms of expertise that partners can bring to a project (e.g., Niculescu et al., 2020) and that are part of developing a genuine and authentic staff-student partnership (Dwyer, 2018; Matthews, 2017). With the wider scope of the main project and to broaden the student expertise, the project involved three student partners representing both the undergraduate and postgraduate community. Student partners brought an expertise of the end-user experience and the ability to connect with peers authentically to elicit a broader contribution and consensus.

The students recruited to take part in the project had expressed prior strong interest in and contributed to a wide range of physics education, community, and learning environment initiatives. A first-year and final-year undergraduate, engaged 5 days per week on the project, brought a combination of “junior” and “senior” student perspectives to the space, and a postgraduate student engaged 2 days per week brought experience of using the spaces for their cohort’s learning needs. As a result, the entire taught student

community had the opportunity to contribute to the student partnership. Key project activities planned at the outset involved:

- exploring design features of similar spaces across campus and other institutions
- understanding constraints to be applied (e.g., circulation routes, disabled access, fire safety, etc.)
- undertaking staff and student consultation to understand existing usage and relationships to surrounding spaces
- preparation of provisional student-led designs
- evolution of designs through collaborative focus groups
- development of project phasing and prioritisation

Student partners were cognisant of the esoteric aspects of the disciplinary context of their education, which needed to be addressed by the designs. A doctoral research student (co-author Luke McCrone) undertaking research into transitional education spaces, including the pilot project, provided research expertise and acted as a "translational designer" who was able to use his knowledge of the learning space literature and research findings to guide the philosophy of the educational design (Norman, 2010). Key among the staff partners were (a) a member of staff from the physics department (co-author Yasmin Andrew) who contributed staff requirements of the different areas as well as an alternative perspective on the potential academic use of the space and (b) the department operations manager who provided logistical and practical expertise on the deployment of infrastructure improvements, non-academic requirements of the space, and placing the project in the context of other developments in the department. Partnership with a key member of the central estates team was also important (co-author Craig Walker) to ensure institutional commitment to the project. Identifying the expertise needed for the successful completion of the project was key in generating an authentic and effective partnership and one that would ultimately yield an implementable output within reasonable budgetary constraints.

Fundamental to the project was a commitment of capital spending by the institution for the project from the outset. This ensured that both staff and student partners felt that project designs would be implemented if reasonable. However, students were not given a specific budget to work within but rather guidance on project feasibility and value for money for the nature and scale of works. This ensured the freedom to explore options, allowed creativity, and ensured that there was no target budget to spend up to. It also helped to manage student partner expectations that some of the proposed changes might not be feasible.

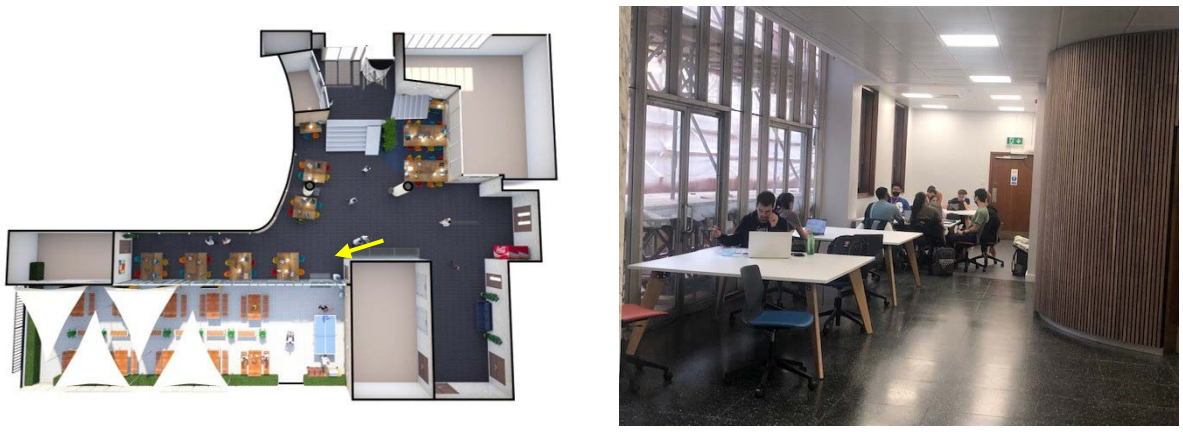
The timeline of the main project was agreed between the physics staff member and the students to last 5 weeks over a summer vacation, with planned 1-hour weekly meetings. In addition, the student group organised their own meetings a couple of times a week between themselves and contributors to the project but were otherwise given freedom to organise their time and approach as needed to accommodate their plans. The deadlines for presentation of design ideas to the department were after the end of the main project phase to alleviate risk of a deadline-driven compromise to quality. The flexibility in the project time required the physics staff member to continue the weekly meetings with the students over the entire summer when they were possible, working around any absences due to holidays, for example. However, the more relaxed approach to partnership was key

to the success of the project, giving students ownership of their time and the opportunity to develop remote collaborative working during the early part of the COVID-19 pandemic.

UNDERTAKING THE PROJECT

Following idea development and familiarisation with the project, the student partners undertook a phase of peer consultation. An initial online survey codesigned by staff and student partners was sent to all students in the department to ensure all users of the spaces had an opportunity to engage. The survey hinged around questions intended to better understand students' pre-existing learning behaviour and social perspectives on the space. The survey included multiple-choice, ranking, and open-ended questions which resulted in detailed responses. Numerical questions were summarised, and each student partner wrote their own summaries for each of the open-ended responses to identify key themes. This data allowed two initial designs to be created which were then used as part of three semi-structured staff interviews. The focus of these interviews was how to best find solutions to facilitate staff-student interactions in the space, using the initial design ideas as question prompts. The interviews were recorded and transcribed for sharing amongst the project partners and produced some new perspectives on the design. Following this, two alternate designs for the space were presented in student focus groups, with up to three participants in each. Originally these were intended to follow the "sandpit" style of Frohlich et al. (2014) where amendments to the designs could be tested within the session. Unfortunately, undertaking this in a remote environment, due to COVID-19, was impractical, and instead the focus groups adopted a semi-structured approach with a set of pre-determined and optional spontaneous questions. A key aim of these focus groups was to allow decision-making on design options where the student partners disagreed between themselves, whilst also allowing for further design development from the focus group data.

Figure 2. 3D floorplan of the redesigned entrance area and a photo of one area with newly installed furniture (photo angle indicated by arrow)



This process culminated in a set of designs, shown in part in Figure 2, that were shared with the estates team and presented to the physics department staff for comment. Following this, discussions were held with the student partners around prioritisation, budgets, and an achievable phasing of activities as part of a negotiated process. Whilst the entire design could not be implemented in one go, students remained part of the decision-making process throughout. This was key to maintaining a genuine partnership, with

students involved until the final decision point when furniture suppliers were decided upon, involving translating original conceptual designs to specific furniture choices. This ensured that student and staff agency over the design was maintained throughout.

REFLECTIONS ON THE APPROACH

The project was undertaken during the COVID-19 pandemic and, as such, there was limited access to campus for staff and students; both largely relied on remembered experiences of using the space, video calls with on-site staff, and floorplan drawings. While this posed challenges with visualising the spaces, this was somewhat mitigated with detailed floor layout designs using free software like Floorplanner (Figure 2).

Engagement with the wider staff and student body was also challenging due to the largely online nature of the project. One of the values of this project was to engage students at various levels of participation (Bovill & Bulley, 2011). Whilst three students took control and engaged in partnership, a wider number of students were invited to participate with the survey process, and a smaller number of students from the survey population were given a small number of design choices to discuss and develop through focus groups. Ultimately all students in the department will experience the outputs from the project once works are complete; the relationship between user engagement in design and later usage provides a further avenue for research. One student partner reflected: "Ultimately, I feel very privileged to have been able to make an impact on a space that my peers and I will soon be interacting in on a day-to-day basis" (MacIntosh-LaRocque, 2021).

One challenge for staff partners was to manage student partner expectations around implementation timeframes, which was particularly apparent from the pilot project. Capital spending can be a prolonged process, and scheduling enabling works (e.g., closing all corridors on a floor to run new power cables) outside of core teaching time can result in project delays. Whilst these might be familiar for staff regularly working in these areas, student partners were pre-emptively made aware that they might not see the impact of their project as soon as they may have liked. The COVID-19 pandemic created further challenges in this respect. Nevertheless, staff noted that the project designs were insightful, high quality, and clearly implementable; such staff would often have engaged external consultants to produce designs at many times the expense of engaging with students in partnership and during which a necessarily more superficial consultation with students would take place. It was acknowledged that in similar circumstances, where appropriate staff and student expertise could be brought together on a project, this provided a more authentic translation of user requirements to designs, resulting in a superior quality, more cost-effective design process.

Student partners developed a range of new skills and perspectives, which influenced their behaviour and thinking (Curtis & Anderson, 2021) and their role in the institution (Martens et al., 2019). Several of the benefits of partnership identified by Mercer-Mapstone et al. (2017) were noted by the student partners. The opportunity to engage in a project outside of their disciplinary expertise was also an asset, as expressed by one student partner:

> Working on a project so different from anything I would have encountered during my degree has given me a prime opportunity to learn new skills, to think on my feet and expand the breadth of my university experience. Learning how to interact with staff, deal with data in the social sciences, and develop a project using constructive criticism are just some of the skills I've developed during this project. (MacIntosh-LaRocque, 2021)

Subsequent to this case study, a further three large-scale projects have been undertaken or are in progress at the time of writing. This has extended the reach of this approach to three of the four constituent faculties of the case institution. Students (from a subsequent project) have further reported the creative aspect of space design projects and their appreciation of sense of identity and belonging student spaces should have:

> If you walk around the space at the moment, you don't really get a sense of what the [department] is about, who's in it, or what we get up to. If we could showcase the creative sides of people and celebrate their sporting achievements, that would be quite inspiring. (Pells, 2022)

The significant scaling up of this approach across the broader range of infrastructure improvements across an institution is a challenge. Whilst relatively low in cost, (for student support), significant staff time and intellectual investment in the partnership approach is needed, and identifying willing staff partners is challenging. Many projects are either far too large or too small a scale for effective partnership or are in spaces that have so many technical constraints that the scope for student design is limited. However, for spaces such as described in this contribution, they provide the sufficient scale, scope, and creativity for students to authentically engage in partnership, and this is being realised as a longer-term outcome of the project with subsequent projects.

Furthermore, it is indicated from related PhD research findings (McCrone, 2021) that the involvement of students both through direct partnership and consultation in the re-design of the space positively changed their agency in how they later engaged and learned within it; this deserves further scholarly attention. Long-term studies could also focus on broader constructs of student engagement and how this is influenced when students design the space in which they "do" student engagement.

CONCLUSIONS

As demonstrated by this case study, engaging students as partners in education space design provides a valuable experience for student partners and creates educationally productive spaces that will have significant impact on the wider student experience. As is often cited in partnership literature, identifying the nature of student expertise is key to these projects; students are experts in how students learn, socialise, and interact in various spaces in an institution and can therefore contribute uniquely and significantly when developing these areas if they are equipped with the right tools, knowledge, and participatory structures. However, it is important to ensure the partnership involves staff with expertise in managing building projects so that the project outputs remain realistic and implementable. Furthermore, having some prior financial commitment to implementing the outcomes of the project was key to ensuring validity and motivation to the student and staff partners. It was clear that if the project had been presented at the end as a "take-it-or-

leave-it" outcome, the student partners, and the broader student community of which they are a part, would have felt significantly devalued. The design partnership resulted in education space design of higher quality and at lower cost than more traditional approaches and enhanced the value of the new spaces among fellow staff and students.

A project engaging students as partners in education space design as described here does not easily fit within existing models of student partnership (Healey et al., 2014, 2016). We would argue that partnership could be considered within a broader range of institutional activities and would enhance student engagement not only within specific disciplinary contexts, but also more broadly across an institution. We encourage institutions to consider opportunities for student partnership in education space design to enhance student engagement in an aspect of the student experience that can be particularly impactful. Such opportunities represent a broader institutional approach to student partnership and enable relatively small numbers of staff and students to have an impact on both the student experience and the sense of engagement and ownership felt by all students at an institution.

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NOTES ON CONTRIBUTORS

Mike Streule *is director of Imperial StudentShapers, Imperial College London's programme to support staff and students engaging in partnership in education, and supports a range of projects across the institution to enhance the educational experience.*

Luke McCrone *completed a PhD in transitional spaces, which explored and evaluated one of the redesigned spaces in this project and is now a research associate at Imperial College London.*

Yasmin Andrew *was a key staff partner in this project and is the student liaison officer in the physics department, Imperial College London.*

Craig Walker *was strategic lead of educational infrastructure development at Imperial College London at the time of the project and now leads projects with HEdway Group, deploying principles of user-centred, participative design and active student partnership across the UK higher education (HE) sector.*

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