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Transformative Role of Participatory Design in Shaping Educational Content: A Journey from Student Co-Designer to Learning Designer

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ABSTRACT

This paper explores the transformative potential of participatory design in higher education, highlighting how the integration of student perspectives can drive the creation of more effective educational content. Drawing on my personal journey as a student co-designer, the paper reflects on my involvement in creating user-centred, gamified, and visually engaging educational materials for informal university courses. Through my experience in co-designing the Gateway, an e-learning platform for personal and skills development at a UK university, I examine how integrating student input led to the development of interactive learning modules tailored to their needs. A central theme of this paper is the vital role of students as active co-designers in the educational process. As a student, my engagement in the iterative design process encompassing elements such as course content, narratives, visuals, and gamification, ensured that the final product was aligned with student expectations. A key feature of the design was the strategic use of gamification, including storytelling, multimedia, point systems, and challenges, which helped motivate students, especially in a voluntary program running alongside their degree courses. Reflecting on the methods, feedback, and lessons learned from the project, the paper discusses how these insights have shaped my current practice as a learning designer. It also suggests ways to implement this participatory design approach in educational contexts, highlighting its potential to foster more engaging and inclusive learning environments.

Keywords: Participatory design, Gamification, Student-centred Learning, Interactive E-learning, Co-design.

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1 INTRODUCTION

In recent years, there has been growing recognition of the value of participatory design in education, an approach where end-users collaborate in shaping learning content and experiences (Cumbo & Selwyn, 2021). This aligns with the broader "students as partners" (SaP) movement, which positions students as co-creators rather than passive recipients of educational content (Healey, Flint, & Harrington, 2014). While participatory design emphasises content-specific collaboration, the SaP model ensures a broader pedagogical transformation through sustained, reciprocal partnerships characterised by shared decision-making power and mutual accountability which shape both the systems and educational experiences that enhance learning outcomes.

The Gateway project (originally the Passport project) exemplifies this approach. Developed as a gamified e-learning platform to support student personal development through voluntary, playful participation, the project engaged students as co-creators across the full cycle of planning, implementation, and evaluation. It fostered mutual learning between students and staff, promoted shared responsibility and distributed decision-making, and ensured inclusive participation across diverse student groups. Situated within the Students as Partners framework and operationalised through participatory design practices, the Gateway sits within Healey et al.'s (2014) curriculum design and learning and teaching quadrants, with students shaping the learning content, pedagogical strategies and course priorities, thereby influencing how learning was structured and how success was conceptualised within the programme.

This paper traces my journey as one of these student co-designers, examining how the process unfolded, the outcomes it produced both in terms of the platform and student reception and how this experience shaped my personal and professional development.

Deviating slightly from a traditional academic style, this paper offers an auto ethnographic reflection on how the project supported me as an international postgraduate student, providing opportunities to collaborate with diverse peers and staff while applying academic learning in a real-world context. This experience helped me develop expertise in e-learning and prepared me for professional roles in the UK. After graduating, I worked as a Learning Designer and later as a Learning Technologist, drawing upon insights from the co-design process—especially the value of meaningful student involvement, intentional gamification, and attention to usability and accessibility.

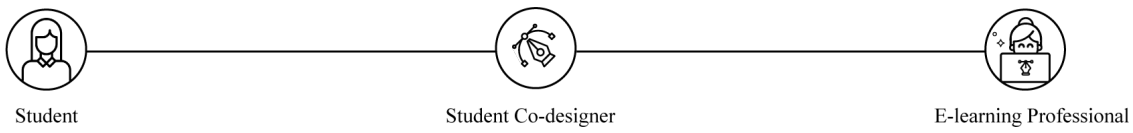

Figure 1: Overview of author's journey discussed in this paper

This paper examines the transformative role of participatory design through the lens of my journey from a student co-designer to a professional learning designer. By "transformative," I refer to changes at three levels: the Gateway platform (a more engaging, student-centred design), my own identity and

confidence as an educational practitioner, and the design principles I carried into subsequent professional roles.

1.1 Learning experience design and Gamification

Traditional instructional design models focus heavily on content delivery and instructor-defined learning goals are giving way to approaches like Learning Experience Design (LxD), which merge principles of user experience (UX) and user interface (UI) design with pedagogy to create more human-centred learning experiences. For example, Bozarth (2020) notes that instructional design is increasingly shifting toward "less content, more learner", emphasizing the learner's experience over sheer content volume. LxD frameworks imbibe UX methods - such as user research, prototyping, and iterative testing - into course design, ensuring that learning materials are not only instructive but also intuitive and enjoyable to use (Debell, 2020; Hogle, 2018).

Similarly, online asynchronous learning is often underpinned by constructivist views of learning, where learners build understanding through active engagement, reflection, and interaction with authentic tasks (Jonassen, 1999). Frameworks such as Laurillard's Conversational Framework (2002) emphasise iterative cycles of feedback and adaptation between learner and system, which are particularly relevant to self-paced digital environments. These theories clarify not only how learners construct knowledge online, but also what kinds of pedagogical moves scaffolding, challenge, reflection prompts enable meaningful learning.

Another key development in modern learning design is the incorporation of gamification and interactive elements to boost student motivation and engagement. Gamification is commonly defined as "the application of game design elements in non-game contexts", such as education, to make learning activities more engaging (Deterding, 2012). Game designers have long mastered techniques to sustain user interest and motivate behaviour (Chou, 2015), and education researchers have recognized that these techniques can be repurposed to enhance learning experiences. A wide range of gamification practices – points, badges, leaderboards, storytelling, challenges, and reward feedback loops – have been applied in sectors from corporate training to healthcare and higher education. In the higher education context, most gamification efforts to date have focused on formal coursework (e.g. gamified quizzes or assignments in class). Systematic reviews indicate gamified learning can yield improvements in engagement and academic performance, although outcomes vary depending on design quality (Subhash & Cudney, 2018). Gamification's effectiveness is grounded in motivational theory. Self-Determination Theory (Deci & Ryan, 2000) holds that intrinsic motivation rises when autonomy, competence, and relatedness are supported; well-designed gamified tasks can do this through meaningful choice, optimally challenging, feedback-rich activities, and social collaboration/competition.

However, there are also documented pitfalls if gamification is poorly implemented: researchers have noted potential negative effects such as trivializing content, inducing unwanted competition or anxiety, and undermining intrinsic motivation if extrinsic rewards are overemphasized (Markopoulos et al., 2015; Toda et al., 2018). Therefore, scholars stress the need for thoughtful design frameworks

and careful user testing when integrating gamification into education. A participatory design approach is a promising strategy to mitigate these risks.

In the sections that follow, I outline the participatory design methodology used in the Gateway project, including my role, design activities, co-creation sessions, and feedback loops. The results section then presents the outcomes for the e-learning platform such as UI/UX improvements, gamification features, and student-centred enhancements as well as my transition into professional practice. The conclusion discusses the wider implications of applying participatory design in educational contexts.

2 METHODOLOGY

2.1 Methodological approach (autoethnography)

I adopted an autoethnographic approach to examine participatory design from an insider position as a student co-designer who later became a learning designer. Autoethnography is suited to studying practice in context because it links personal narrative to cultural and organisational processes while foregrounding reflexivity about power and role (Ellis et al., 2011; Chang, 2008;). I acknowledge the benefits and limits of an insider stance: proximity affords rich and situated insight but also risks blind spots. I also acknowledge my dual position as both student and co-designer, recognising the potential for positive bias, and mitigate this by drawing on multiple data sources.

The account integrates multiple, naturally occurring and elicited materials:

- Quantitative mail survey
- Co-creation workshops and focus group recordings
- Project artefacts
- Co-interview with the other student co-designer
- Personal Reflections

More specifically, the dataset comprises: (a) a quantitative survey used for the summative evaluation of the existing platform, which informed understandings of user behaviour, supported user-persona modelling, guided the design of subsequent focus groups (b) transcripts from two co-creation workshops and focus groups with small, homogeneous cohort of students, which provided early reactions to prototypes and enabled collaborative storyboarding of new units; (c) project artefacts generated across different stages of the Gateway Project, including UI designs, prototypes, storyboards, heuristic-evaluation outputs, and dissemination materials; (d) a co-interview conducted by project leads with myself and the other student co-designer, in which we reflected on our experiences working within a co-design framework; and (e) personal reflections documented through contemporaneous notes and memos during my transition into professional learning-design roles.

Ethically, all student participants have been anonymised, and identifying details relating to individuals or courses have been removed. Only short excerpts from workshop and interview transcripts are included. Participants provided informed consent prior to the recording of any sessions.

2.2 Participatory Design in the Gateway Project

As discussed previously, the Gateway project used a participatory design approach, involving students in developing informal, non-credit online "missions" that awarded points and digital badges. The goal was to create student-centred, motivating content that used gamification to sustain voluntary engagement. To achieve this, the project leaders (a team of educational developers and researchers) recruited student partners through a competitive process. I served as a student co-designer, joining a development team that included academic staff and one other student co-designer. With a balanced student-staff ratio, the team operated in the "third space" described by Bamford, Moschini and Tschirhart (2022), where staff and students collaborated as co-creators outside of conventional classrooms.

In the co-designer role, I contributed to multiple facets of the project, from initial content analysis to final packaging within the institution's Virtual Learning Environment (VLE). Using data from the survey, key academic skills and personal development topics were identified for the missions (for example, "Harvard Referencing Skills," "Cultural Differences," and "Digital Behaviours in an Online World," among others, as later implemented). The existing Gateway program materials which were largely text-based course documents and simple quizzes were gathered as a starting point. My task was digitizing the available content into a more interactive format using Articulate 360, a leading e-learning authoring tool. Although I brought my digital design expertise in Adobe Creative Suite to the team which was useful for designing high quality interfaces and design assets for the modules, the role required learning Articulate 360, a platform rarely discussed in mainstream interaction design.

A distinctive feature of the methodology was the use of co-creation sessions and feedback loops with end-users (students). The design process was treated as an iterative cycle of prototyping and user testing, consistent with participatory and human-centred design principles. Co-creation sessions and focus groups were organised with a diverse sample of undergraduate students from the university to co-design missions and gather input on initial ideas. Concept art, sample slides, and proposed gamification features were presented, and structured discussions were facilitated to elicit reactions and suggestions. Workshop and interview transcripts were treated as qualitative data and subject to a light thematic analysis.

Table 1: Thematic Analysis of Student Feedback

Theme	Summary of Student Feedback	Representative Evidence
1. Desire for Varied & Interactive Question Formats	Repetitive questions felt monotonous; students wanted varied, sensory-rich, interactive tasks.	Students reported boredom when "questions look the same" and they "just click anything" They suggested adding images, sounds, and sensory elements
2. Importance of Visual & Multimedia Design	Strong visuals, imagery, and animations were seen as essential for engagement and clarity.	Requests for images of study environments, background audio, and visual cues Interest in character-linked imagery (e.g., "if you're studying, Max is studying")
3. Preference for Gamification & Progression	Students valued avatars, levels, rewards, maps, and collectible elements to sustain motivation.	Suggestions included avatar evolution, collectibles, coins, and levelling
4. Supportive, Immediate, and Encouraging Feedback	Students preferred gentle tone, soft colours, and immediate feedback to reduce anxiety.	Recommendations for "softer colours, don't make it look like we failed." supportive emojis, and avoiding negative tones.
5. Flexibility	Students wanted flexibility and choice, with optional missions and non-linear progression.	Emphasis on wanting "freedom to pick" missions. Acceptance of linear unlocking when justified (e.g., stamps)

Findings from the focus groups drawn from reflective notes, transcripts, and co-created storyboards were reviewed in team meetings that included both student designers and staff. These discussions informed successive design revisions, reflecting a collaborative process where internal co-designers and external end-users shaped the product through multiple feedback loops. Because the two co-designers (including me) were also students, we had an intuitive sense of what might feel tedious versus engaging.

The missions were developed through a mixed approach that combined insights from focus groups and co-creation sessions with pedagogical, motivational, and gamification theories. Student feedback guided early refinements for example, students liked the guiding character "Max" but recommended changes to his appearance, which were implemented. The feedbacks also addressed narrative immersion, usability, and terminology. In the co-creation sessions, students influenced the structure, activities, game mechanics, and tone across missions. During the Study Skills mission, they proposed a map-style layout with illustrated levels and non-linear pathways. I supported these design discussions by introducing relevant frameworks and clarifying what was technically feasible within Articulate 360.

Across missions, feedback consistently emphasised the need for varied question formats, strong visual and sensory cues, clear instructions, and a supportive tone. This led to the adoption of drag-and-drop tasks, scenario-based questions, and instant feedback. Each module was framed as a "mission," with points, badges, and attempt limits aligned with Self-Determination Theory to balance autonomy, competence, and relatedness.

In the Cultural Differences mission, the feedback motivated us to strengthen the overall presentation. Drawing on my digital-media background, I supported the development of animated storytelling to enhance narrative clarity, emotional resonance, and visual appeal in response to this feedback. Instructional design principles multimodal learning, scaffolding, and chunking and sequencing were applied to structure more complex missions such as Working Across Boundaries and Harvard Referencing, where hints and calibrated feedback ensured tasks aligned with perceived competence.

While student perspectives shaped most design decisions, not all suggestions could be implemented. Some recommendations reflected expectations shaped by exposure to sophisticated digital experiences, which exceeded what staffing, time, and institutional resources could support. Nonetheless, we incorporated variables, states, and conditional triggers to emulate game-like responsiveness where feasible, while also recognising that certain decisions reflected my own theoretical grounding and design judgement.

Given the qualitative nature of the study, its claims are not statistically generalisable. Instead, the analysis follows the logic of analytical generalisation, providing a thick, contextualised account of the Gateway project and connecting it to established Students-as-Partners and participatory-design

frameworks. Strengths of this approach include access to rich process detail, the ability to trace identity shifts over time, and strong alignment between design work and reflection. Limitations include reliance on self-report, potential overlooking of disconfirming evidence, and the absence of systematic outcome measures beyond those available from related institutional evaluation.

3 RESULTS

A participatory design and gamification strategy substantially reshaped the Gateway platform, yielding an experience far better aligned with student preferences than the original version.

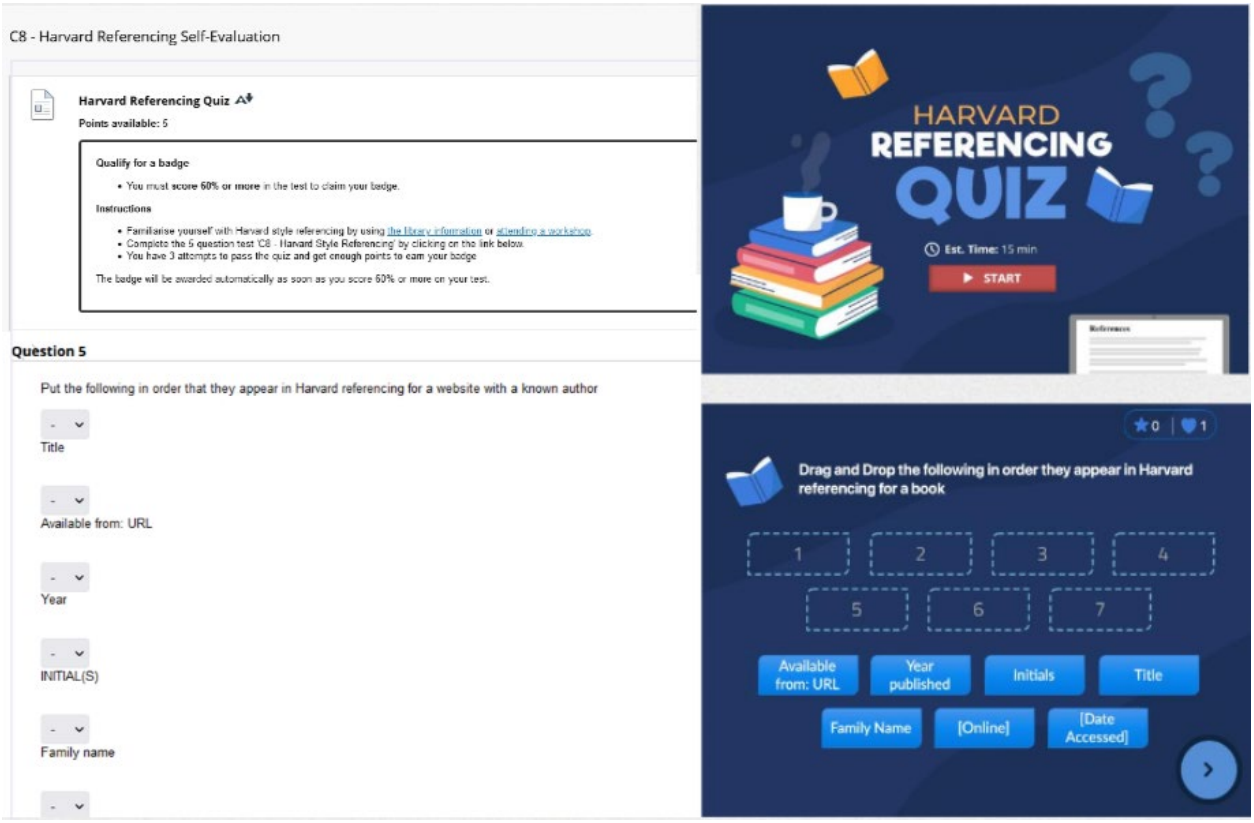

Figure 2: Changes in the UI/UX of the platform after student input

The most visible shift was the student-friendly UI/UX. The redesign introduced a bright, inviting colour palette, intuitive navigation, and a consistent mission layout that guides learners' step by step. The animated mascot "Max" functions as a supportive virtual guide, surfacing tips and encouragement via tooltips and dialogue boxes. This character, initially static, was redesigned and re-toned in response to student feedback, who reported that a friendly guide made the experience feel livelier.

Figure 3: Redesign of the guiding character, 'Max'

These missions were added to the institution's VLE, and early voluntary attempts produced positive comments suggesting the platform is now substantially more engaging. Students highlighted that the co-designed missions felt distinctively "for the students," and appreciated that the platform had been shaped by peers. This sense of ownership contributed to increased confidence, autonomy, and skill development, as well as greater motivation; some students explained that "understanding the complexity behind the scenes" made them want to participate more. Design decisions implemented in the Gateway missions, such as immediate feedback and a clear points-and-badges structure, were also positively received: "This is very good. I wouldn't change anything here on" one student commented, indicating satisfaction with the final co-designed result.

I got the opportunity to present it to the university stakeholders at an international higher-education research symposium (2022) and the university showcase (2024) in which the response was overwhelmingly positive. The missions developed through co-design were carried forward and embedded within an *inclusive leadership* initiative, a collaborative initiative offering a digital and gamified Collaborative Online International Learning (COIL) opportunity between multiple universities based in the UK and in France.

This article does not claim to provide a comprehensive evaluation of the Gateway programme, and systematic usage analytics and outcome data are reported elsewhere. Instead, it focuses on how the design changes, together with workshop feedback and co-interview reflections, indicate that the co-designed missions better matched student expectations of an engaging, usable learning experience. Students' emphasis on meaningful choice, high-quality visuals, and a sense of equality in decision-making suggests that participatory design affected not only surface aesthetics but also deeper aspects of how they related to the platform.

Taken together, these results suggest that participatory design shifted the locus of design authority: students helped define interaction patterns, narratives and visual language, while staff negotiated technical and pedagogical constraints.

Within the third-space arrangement of the Gateway project, power was experienced as dynamic and negotiated rather than fixed. Weekly dedicated time outside formal teaching enabled students to participate as design partners rather than solely as consultants. Staff established the structural conditions for partnership by facilitating access to institutional systems, focus groups, and dissemination opportunities. Students led focus groups and made key decisions on interaction design, visuals, and gamification, with staff providing pedagogical and technical guidance. Final approval

and implementation remained with the institution. Over time, repeated interactions reduced perceived hierarchy and increased student confidence in decision-making, strengthening the partnership. However, participation was constrained by limited student availability, alongside degree commitments and by restricted resources, illustrating the partial but meaningful redistribution of power within this Students-as-Partners initiative.

3.1 Reflections on Personal and Professional Development

Beyond the positive impact on the learning platform, the participatory design experience was personally transformative. Contributing to a university-led project while still a student offered a unique form of experiential learning and professional socialisation. As Bovill et al. (2016) outlined, as a co-designer I adopted four roles: representative, consultant, co-researcher, and pedagogical co-designer. In the co-interview, I reflected that inhabiting these roles "made me see myself not just as a student on a course, but as someone who could shape the course itself," highlighting the shift from recipient to contributor in my identity as a learner-partner.

As an aspiring international student arriving in the UK, I initially struggled with culture shock and a lack of belonging. Early on, I felt the absence of a support network, leaving me unsure of how to navigate this new environment. This project provided a supportive space where I felt seen and included, and where I could contribute meaningfully. In the co-interview, I described the project as "the first time I felt I had a place in the university beyond just attending classes," underscoring its role in fostering belonging. Initially hesitant to speak in meetings with senior academics, I gradually recognised that my input was genuinely valued. Working with staff and students from a wide range of countries and disciplines deepened my appreciation for cross-disciplinary collaboration and enriched my understanding of how different academic cultures approach design.

Working as a co-designer meant representing student perspectives in a professional environment, which required leadership, initiative, and collaborative decision-making. A defining moment in this journey was co-presenting at the HERG International Symposium an empowering experience that affirmed the role of student voices in shaping innovation within higher education.

This student-centred design mindset continued to shape my professional work after graduation. As a Learning Designer, I drew on my own experiences as a former student to contribute to the development of a bespoke VLE at a new engineering institution. The full control offered by this custom system allowed us to implement clear navigation, consistent layouts, and accessibility-focused features elements students frequently described as easy to use and intuitive. At the same time, working within a highly customised environment revealed practical constraints: although effective for learners, such systems require continuous developer support and can be difficult to scale. This reinforced an important lesson I first learned in Gateway that while co-designed, personalised platforms enhance the learner experience, sustainable design requires balancing customisation with maintainability. It highlighted the value of involving students early and iteratively, not only for relevance but also for preventing costly redesigns later.

On the technical side, the Gateway project introduced me to instructional design and digital learning development. Guided by mentors, I learnt to apply learning theories, storyboard content, design for accessibility, develop animations, and analyse user feedback. I became proficient in tools such as

Articulate 360, Adobe Illustrator, After Effects. Ultimately, this experience played a central role in my transition into a professional Learning Designer role, equipping me with both the confidence and practical skills needed to discuss user-centred design, gamification, and evaluation in professional contexts.

3.2 Influence on Professional Role and Subsequent Projects

The experience I gained and the insights I gained from co-designing the *Gateway* platform have directly informed several projects I worked on later as a professional in the realm of e-learning and instructional design.

3.2.1 Interactive Systems Thinking Module

In a more technically oriented context, I later worked as a Learning Designer at a new engineering-focused institution grounded in project-based and blended learning. There, I contributed to an interactive e-learning module on Systems Thinking for second-year engineering students. Drawing on insights from the Gateway experience, I helped design a narrative-driven, scenario-based module built around a real-world case study on flood disaster mitigation in Australia, positioning students as an advisory team tackling a global challenge.

A key contribution was the creation of a fictional guide character an approach inspired by "Max" from the Gateway missions who acted as a domain expert, provided context, and maintained narrative cohesion. Students reported that this character made complex concepts more accessible and added a human dimension to the online experience.

The module also integrated rich multimedia and interactive elements, including high-quality explainer animations to clarify difficult systems concepts. Student outcomes were strongly positive: pre- and post-assessments showed measurable gains in systems thinking, and learners highlighted the interactivity and real-world relevance as major strengths (Shinde et al., 2025). For me, design choices such as using a narrative guide, balancing interactive elements, and ensuring accessibility and clear navigation all reflected the participatory, student-centred mindset developed during the Gateway project.

3.2.2 "Working Across Boundaries" – Diversity and Workplace Preparedness Module

Soon after transitioning into a professional Learning Designer role, I contributed to an online unit titled Working Across Boundaries, designed to help students navigate cultural, generational, and linguistic differences in the workplace. As an international graduate adjusting to the UK work environment myself, I brought first-hand insight to the content.

I developed scenarios based on my own experience with cultural differences in communication styles. This learner-informed perspective resonated strongly with students especially international learners who noted that the scenarios reflected challenges they had personally faced and made them feel understood. For me, this became a "full circle" moment: the cultural adjustments I once struggled with had become teaching material to support others, demonstrating how personal experience can enrich participatory design through empathy and relevance.

The success of Working Across Boundaries illustrated the value of integrating lived experiences into content design and suggested that involving recent graduates or students can greatly enhance transition-to-work modules by bridging academic and professional contexts.

4 CONCLUSIONS

This paper has examined how participatory design can operate as both a design practice and a developmental pathway, following one student's movement from co-designer to professional learning designer. Rather than treating students simply as informants or testers, the Gateway project positioned them within core design conversations about narrative, interaction, and visual language. It demonstrated that students are not merely judges of whether something "works", but capable contributors to the conceptual framing of an e-learning experience, shifting the platform toward greater student agency and voice.

Viewed through a Students-as-Partners lens, the case highlights what it means to move beyond consultation into genuine partnership. Students influenced key decisions, staff adapted assumptions in response, and responsibility for the final product was shared. As a result, the co-designed missions were perceived as being "for the students", and engagement extended beyond the novelty of gamification. When learners help to decide which challenges matter and how stories are told, gamified design becomes less about superficial rewards and more about meaningful experiences.

The narrative also underscores that co-design is itself a powerful pedagogical space. Acting as a co-designer required the student to navigate institutional norms, communicate with senior staff, and translate peer feedback into design decisions, while developing technical skills in authoring tools and multimedia production. These experiences laid the groundwork for later roles in learning design and learning technology, where similar principles were applied in new and technical contexts.

Methodologically, an autoethnographic case study proved useful for linking concrete design decisions to lived experience and identity development, while acknowledging limitations in scope and generalisability. The analysis offers analytical generalisation rather than universal claims: readers are invited to consider how similar participatory approaches might be adapted within their own institutional and disciplinary contexts. Future work could complement this perspective with more systematic evaluation of learner outcomes and with comparative cases that explore how different institutional conditions enable or constrain participatory design in higher education.

From this trajectory, a practical institutional model emerges. Universities could systematically recruit motivated, diverse students into design teams for new educational initiatives, formalising the practice through a Student Design Fellows programme that offers credit or stipends. Such an initiative would yield a dual return: higher-quality, student-centred learning products and a pipeline of future educational professionals trained through authentic, situated practice.

In sum, the transition from student co-designer to learning designer illustrates a viable pathway for how higher education can evolve through authentic partnership with students. Participatory design not only produces more engaging, equitable, and effective learning experiences; it also reconfigures

the traditional power dynamics of curriculum and platform development, positioning students and educators' side by side in innovation. As institutions confront the demands of 21st-century learners and the rapid pace of development in educational technology, embedding structured, reciprocal collaboration with students is likely to become not just beneficial but essential.

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