

STUDY

DEMOCRATIC APPROACHES IN THE CO-PRODUCTION OF LEARNING SPACES IN HIGHER EDUCATION: FACILITATING PEER LEARNING THROUGH THE CO-DESIGN OF GAMIFIED DIGITAL RESOURCES IN INTERNATIONAL CONTEXTS

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ABSTRACT

In this article, we consider how student participation in the design and development of a project to create interactive digital resources for extracurricular activities promotes an authentic space for learning inclusive leadership skills and the soft skills needed for future employment. Through the voices of students in the UK and international settings, insights are provided into the importance of understanding the role of the third space for peer learning, innovation, and practice. The project aimed to encourage students to build relationships: student to student, student to lecturer, and student to community. Participation in the design and development of an extensive gamified digital learning tool enhanced opportunities for peer learning and developing inclusive leadership skills. This learning, which is in addition to the formal curriculum, furthers the aim of higher education institutions in meeting the educational needs of culturally heterogenic student bodies, including international students, and develops agency and skills relevant to their future employment. The research sites were located in the UK and France. The data were collected through visual data of co-creation workshops and recorded interactions, field notes and observations, researcher diaries, semi-structured individual interviews with staff and students, and focus group interviews.

KEYWORDS

participatory design; student co-creators; gamified learning; international online participation; third space in higher education

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Education is not preparation for life; education is life itself. (Dewey, 1916/2004, p. 239)

Introduction

This article is centered around a pedagogic intervention promoting students' democratic engagement with their learning in a peer context, which we refer to as "peer learning." We have used the concept of democracy in this research to refer to a space in which the traditional power dynamics of the student-teacher relationship are diminished, and communication and engagement in learning activities are participatory, active, and democratic. In this participatory space, we witness the "in betweenness" of the learning construct, with the fluidity of the learning community becoming the dominant paradigm. In other words, education becomes life itself (Dewey, 2004).

This democratic engagement was achieved through extracurricular activities developed in a co-production and co-design context, with students acting as key participants in the development of the intervention and in the accompanying research project. The core team included the co-designing students as key members; decisions were reached equally and through the democratic vote of the whole team. The democratic ethos of the project was further embodied in the co-production phase, in which student co-designers interacted with other student participants and led the decision-making process. Additionally, student co-designers led the decision making in relation to the implementation phase of the project, guiding the design decisions and the structure of the tools that were developed.

We sought to understand how student participation in the design and development of interactive and gamified digital resources promotes an authentic space for learning inclusive leadership and the soft skills needed for their future employment. These extracurricular activities were framed through the theoretical context of the "third space," as they embody notions of "in betweenness" and boundary crossing, as identified by Whitchurch (2012). Burns et al. (2019) highlighted the ways in which the third space can be applied to student contexts, focusing in particular on "students as partners" initiatives. The activities, developed by students for students, were situated outside traditional classroom spaces, included a digital environment as the location for the participatory activities, and reflected a "students as partners"

initiative. Additionally, participation in the development of the intervention, which was the focus of the project, and in the intervention itself were voluntary and not an aspect of the formal pedagogic requirements of the course design and delivery. The co-creation of gamified digital activities by students ensured a peer-driven approach that was embraced by all participants, as all voices were heard and given space to contribute. The voices of students in the UK and international settings provided insights into the importance of understanding the role of the third space as a framework for peer learning, innovation, and practice. If, as Bamford et al. (2022) suggested, students are at the heart of academic practice, approaches to pedagogy that promote the democratization of academic spaces would appear to flow naturally from that ethos. The crystallization of this ethos into an approach for peer learning (Dara & Kesavan, 2025) through student immersion in a collaborative creative process was at the heart of the project and the learning intervention that is explored in this article. It has been acknowledged that university spaces can place limits on the autonomy of individuals in terms of the ability to enact change; however, all the student participants, particularly core team members, were subject to the same limits to their autonomy, thus ensuring that a democratic process was enacted in both the positive and the negative dimensions of the project.

1 Theoretical context

1.1 The third space

The intervention sits within a third space, as defined by Whitchurch (2008), as it is situated in the in betweenness of an educational space where boundaries are crossed in professional and educational practice. Such spaces are not constrained by subject boundaries and the hierarchical relationships of formal teaching spaces; they are fluid in terms of the temporal, relational, and collaborative ethos on which they draw. We drew on Whitchurch's (2008, 2012, 2018) work on the third space, as the locus for the activities was not the classroom nor the subject, and the approach was non-traditional. The participants were drawn from a culturally diverse UK student body and a culturally diverse student body in an international setting in France. Whitchurch noted (2012) that the third space presents an important approach to understanding non-traditional activities in higher education because it offers the ability to explore spatial relationships, particularly where diversity features as an aspect of those relationships.

The cultural difference dimension of the project was a critical aspect, both in terms of the student participants and in terms of the activities and learning tools developed (Bamford & Moschini, 2024, 2025). Mittelmeier

et al. (2023) acknowledged that research with international students should be framed in the context of students as co-constructors of knowledge on cultural differences. Our research echoes this ethos, as the students were participant designers, implementors, and evaluators. Zabrodska and Wang (2025), reflecting on gaps in the research on intercultural communications and international students, acknowledged the need for more intercultural communications research centered on students as co-constructors of knowledge. Dollinger et al. (2023, p. 230) highlighted that “co-designing helps break down the binary student-teacher relationship,” shifting the learning dynamic from a more traditional didactic to a synergetic one. Their research outlined participatory approaches that can be undertaken with international students, providing educators with insights into the student experiences.

The theoretical context applies on two levels. First, the third space theory enables the exploration of social dualisms such as cultural differences, as highlighted by Said (1978). The third space can be seen to frame research that explores cultural differences in the educational space and is relevant to understanding the experiences of a culturally diverse student body (Bamford & Pollard, 2019), as well as the international contexts explored in this project. The second level of application is the analysis of the communication mode between staff and students when the distance between staff and students is levelled and the staff-student hierarchy is less visible. Participatory projects that involve non-traditional interplay between staff and students cannot be seen in terms of conventional binary roles. For the staff involved in such participatory projects, a role shift is undertaken, thus reinforcing the democratically imbued ethos. Bourdieu's (1984) views on the *habitus* of academic staff within higher education culture and the interplay of *habitus* in terms of class showed an aspect of the dualisms in society that play out in classrooms. Understanding traditional roles and hierarchies and the differences with a democratic ethos is relevant here as there is a shift from the traditional *habitus*. As Whitchurch (2012) commented, when understanding the third space in higher education, we witness the insider and the outsider perspectives coalescing in a third space. The third space is a space in which boundaries are blurred and previously invisible communities become visible. In this way, an active pedagogy of democracy becomes possible. This shift from traditional student relationships was highlighted by Burns et al. (2019), who presented a case for the “in between” opportunities of working with students, where boundaries can become blurred and the habitual power dynamics of the teacher-student relationship are overcome.

This shift away from traditional hierarchies places projects such as the one described here firmly in the third space context. The freedom to act and engage within a peer context that is participatory in its ethos and in its

implementation changes the nature of the learning, expanding traditional pedagogic spaces and enabling the development of the transformative criticality referenced by Barnett (2015). It leads to a much broader criticality than the development of subject-based critical thinking and to an opportunity for the development of students' agentic skills. Agency here is drawn from the definition offered by Klemenčič (2015), in which students are prepared for their future in terms of their employment, their participation in a democratic society, their personal development, and the development of transferable skills. A partnership approach, between staff and students and between students and students, is seen as central to building agency. Through collaboration with others, this agentic development that directly feeds the potential for the intellectual and self-formation discussed by Marginson (2014, 2023, 2024) becomes achievable. The vehicle of participation in the co-creation, co-design, and co-research facilitate peer learning and are natural fora, via the focus on dialogic and relational engagement and reflection on personal growth, that serve this agentic development. In other words, through collaboration with others, the potential for the intellectual and self-formation discussed by Marginson (2014) is attainable. In shifting the discourse into the student space, we understand how collaboration with others can be seen in terms of its critical function in the higher education process of self-formation.

The community partnership that drives peer learning and student transitions exists in a symbiotic space that allows participants to fulfill their potential. The blurring of traditional classroom and subject boundaries frames the learning experience and shifts attention to peer interactions in which collaborative and participatory learning are enriched through action and reflection.

An additional layer of this democratic dynamic is that students who co-create and design the activities to be used with other students shape activities that best align with *their* learning needs and perspectives. Democracy is achieved both through participation in the design and development of the learning tool that they will use as students and through participation in the decision-making process in relation to the tool. The students designed the tool, built the tool, decided on the format, and were then involved in the evaluation. The conceptualization of the third space in relation to the democratic dynamic therefore consists of two central elements: the co-creation and co-design of the gamified digital activities and the peer environment where those who benefit from the outcome have a voice in the development of that outcome. The third space agentic development that results is the outcome, with the third space situated outside traditional educational boundaries.

1.2 Innovative pedagogy, peer learning, and building agency

Much has been written about peer learning, but particular attention is given here to the link between peer learning and creating spaces in which agency and Barnett's (1997) building of critical being is facilitated. A peer learning context, through the democratization of the learning space, allows educators and tutors to create the critical relational dynamic to higher education. The collaborative process builds agency and deeper critical engagement. Participatory projects that sit outside formal curricula, in a third space, allow educators to build pedagogic spaces that rely on the relational and democratic. The framing of the learning environment under the umbrella of the third space in a community context allows for peer learning to be achieved as an active partnership and through a democratic and agentic process. It permits a dialogic encounter among all participants.

Nixon (2012) promoted a need for recognition of "modes of understanding" that develop the mutuality and reciprocity of human agency. This mutuality is at the heart of the ways in which pedagogic practice can be developed, enhanced, and refined through active partnership and co-creation. Informed by Plato's dialogue in *Meno* (Cooper & Hutchinson, 1997), a democratic framing of the educational space shifts away from the didactic to a relational and dialogic space in which students and teachers can be seen as partners in the learning experience and peer learning is an essential aspect of the reciprocity necessary for human agentic engagement.

An additional benefit of collaborative peer learning can be seen in addressing the transitional challenges that are prevalent in the evidence (Mountford-Zimdars et al., 2023; Thomas, 2020) in institutions that have large bodies of commuter students and challenges in building community and belonging (Thomas, 2020). Pollard and Bamford (2022) highlighted these transitional challenges, showing the struggle to build community and to bridge subject and discipline boundaries.

The building of community through peer collaboration in a relational context is aided by the utilization of a gamified approach to innovation, as identified by Bamford and Moschini (2024, 2025).

1.3 Gamification in education

There is a long-standing tradition in the use of games for education purposes and often in learning contexts to support engagement. The term "Serious Games," coined by Abt (1970), defined such gaming experiences. Games are used to train, entertain, and inform; they have also been applied to a variety of playful applications that have purposes beyond mere entertainment. The early debate on the value of digital games for adult education has been further amplified by Prensky's views on the potential use of gamified learning, not only for children but also for professional training and higher education

(Prensky, 2001). Since then, researchers and educational practitioners have explored various aspects of educational games. Gee (2003) advocated the benefits of games in developing learning and literacy. Ongoing research in this field reaffirms the relevance of Gee's (2003) work in explaining how game environments facilitate meaningful learning interactions and support the development of digital literacies. Fully-fledged games can be challenging to develop and implement in educational settings (Dimitriadou et al., 2021). A different approach, "gamified learning" has been successfully applied in a higher education context (Adare-Tasiwoopa api & Silva, 2023); gamification is intended as "... the application of game-design elements and game principles in non-game contexts" (Deterding et al., 2011). Gamified experiences are often characterized by the use of points, badges, non-linear patterns, leader boards, levels, challenges and quests, and a system to provide feedback. Thus, gamified approaches offer a combination of *some* of the playful aspects and the motivational mechanics of games with more specific content and applications designed to achieve educational outcomes (Adare-Tasiwoopa api & Silva, 2023; Majuri et al., 2018). The core aim of gamification is to design an experience that motivates and rewards the user (Deterding, 2012; Karimi & Nickpayam, 2017). Several studies have noted the benefits of applying gamification principles to educational experiences (Campillo-Ferrer et al., 2020; Castillo-Parra et al., 2022; Chen & Liang, 2022; Rao, 2022).

Recent scholarship in game-based learning and gamification (Bado, 2022; Gomez et al., 2022; Triantafyllou et al., 2025) has reflected a consolidation of the early theoretical approaches as well as the emergence of new, user-centered, technologically enhanced frameworks, including participatory design approaches to educational game development.

2 Project development context

The methods for both the research project and the evaluation of the learning tool drew on participatory design principles (Clement & Pipek, 2013; Smith et al., 2025). Arnstein's (1969) ladder of participation informed the approach, placing emphasis on flexibility and participation levels, but also advocating full-level participation. This integrated co-design moves beyond tokenistic approaches to participation and enabled peer learning to take place. Within the context of this article, the co-design framework was implemented through the inclusion of UK students and international students as co-designers and developers, co-creators, and co-researchers from the commencement of the project. The inclusive ethos appealed to the researchers as appropriate, for its focus on the inclusion of the end users and the students and in terms of the creative dimension that it enabled.

The sample consisted of students from various cohorts, recruited through snowball sampling. The student groups were involved in co-creation workshops that focused on the ideation of the “missions” (as the students termed the intervention activities). These activities were agreed upon through a process of continual iteration between 2020 and 2023 on the style, content, terminology, and the tool of the learning innovation. Academics and members of professional service departments were also involved in the project team. The project team, including the co-developer students, held weekly meetings from 2020 to 2023 on the development of the missions and the design and layout of the intervention. An example of how student decision making guided the development of the tool is shown in the changes made to the mascot for the project and the intervention, Max, as shown in Figures 1 and 2. The first image was designed by the researchers; this was adapted by the students to the second image.



Figure 1

Originally designed image of the project mascot



Figure 2

Max, evolution of the project mascot through student decision making

2.1 Participatory design workshops

The production of the project was entirely based on participatory design principles (Simonsen & Robertson, 2013; Smith et al., 2025). The core team of co-creators included members of academic and professional services staff as well as student core co-designers. Two core student co-designers had a leading role and direct hands-on involvement in the production and design of the interactive units. A much larger cohort of students, $n=89$ to date, see Table 1 below, was involved in the ideation co-design workshops, at which key ideas around visual and interactive elements, the learning components, character roles, the choice of case studies, and scenarios were discussed. The larger student cohort was also involved in the user evaluation testing and overall project feedback. The co-design workshops proved fertile ground for exchanges of ideas, for the development of student leadership skills, and for cultural interactions and exchanges. During the evaluation workshops, students' ability to exercise their agency in the design process grew significantly, as outlined by the research findings.

Table 1
Inclusive Leadership project participants

Workshop	Student level of study	Background
Co-design workshop 1	Mix of undergraduate business students	2 Americans, 2 British, 1 Nepali
Co-design workshop 2	Mix of undergraduate business students	1 Italian, 1 Spanish, 2 British, 1 Nepali
Co-design workshop 3, London in person and online	Postgraduate students	8 French, 1 American in London 10 French online
Co-design workshop 4, France	Postgraduate students	10 French, 2 Italian, 2 American, 2 Canadian, 1 Finnish
Co-design workshop 5, France	Postgraduate students	15 French, 1 Italian, 2 American, 1 German
Co-design workshop 6, France	Postgraduate students	20 French, 1 Polish, 1 Italian, 2 Dutch, 1 American

2.2 Project output

The project output, a learning tool, consisted of an online learning platform built via WordPress based on a non-linear navigation of a set of interactive units called "missions," each offering an animation-based unit with interactive features, automated feedback, and activities to reinforce the learning. The interactive eLearning units developed for a Collaborative Online International Learning (COIL) tool were: Introductory Unit; Working Across Boundaries; Digital Behaviours; Cultural Differences; Inclusive Leadership;

and E-mail Etiquette. The choice of an online platform for the delivery of the project allowed for the deployment of a number of tools and strategies to support engagement and interaction. The eLearning units are gamified and based on case studies and scenario-based activities visualized via 2D animation; the units are embedded with a rich variety of interactive features that can be experienced during the animation by clicking on various elements of the scene. Some of these elements allow the user to better explore the dialogue components, advance the narrative, or get a more detailed outline of the issues raised. Other interactive elements introduce scaffolding and consolidation of learning via quizzes and learning games unlocking the opportunity to earn points and progress to the next unit. The project avatar “Max” (Figure 1) provides encouragement through the students’ learning journey. Max is a digital learning companion that also helps to contextualize the overall project and the user’s progression. Max has proven to be a central element in the design of the gamified experience, with the wider student co-designer community spending a long time discussing the character and its role in supporting the navigation of the site.

The gamified approach is exemplified in the overall concept of presenting the learning experience as a challenge, with missions to engage with, gaming elements to play with, and points to be gained to progress to the next level. Some examples of the gamified tools are provided in Figure 3:

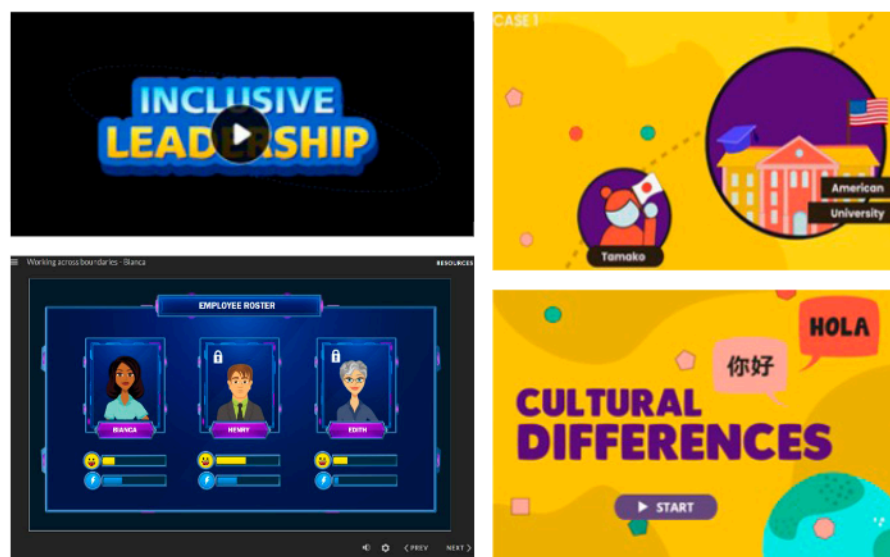


Figure 3
Screenshots of the gamified digital tools developed by students

2.3 The operationalization of the project

The project aimed to encourage students to build their learning relationships: student/student, student/lecturer, and student/community. The diagram in Figure 4 provides a visual representation of the project structure showing the different activity strands.

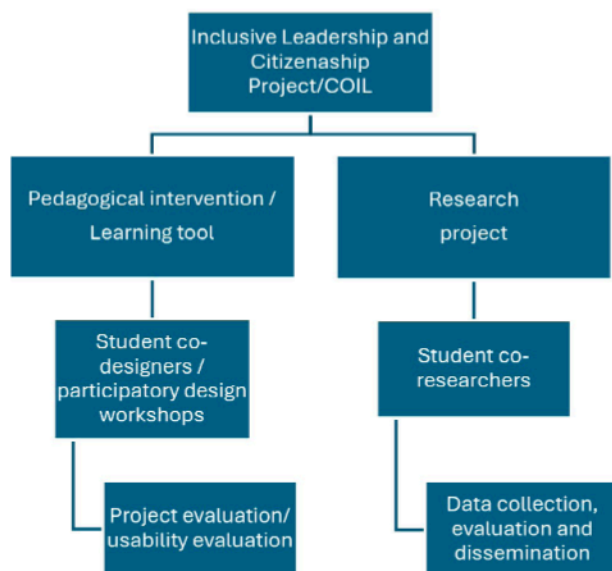


Figure 4
The project structure

Participation in the design and development of an extensive and gamified digital learning tool offered enhanced opportunities for peer learning and developing inclusive leadership skills.

The learning intervention element (learning tool) of the project was introduced at a higher education institution in an inner-city environment in the United Kingdom. The student body is culturally diverse, with over 64% of the students from underrepresented minority groups; 96%¹ of the students identify as having an indicator of disadvantage, such as being the first in their family to attend a higher education institution, coming from ethnically underrepresented groups, or being mature learners. The learning tool is delivered via a virtual learning platform for internal delivery to students in the UK and has been developed for external use via a web-based platform.

¹ Institutional Student Success Strategy 2023.

Currently the learning tool, named the *Inclusive Leadership and Citizenship* project, is being rolled out across the university following delivery in one school where approximately 3,000 students at any given time have access to the platform as users/learners. Student participation is on a voluntary basis. The development of inclusive leadership skills and transferable cultural awareness skills were particularly important to the possibility of developing a Collaborative Online International Learning (COIL) opportunity. The basis for the COIL is the *Inclusive Leadership and Citizenship* web-based platform. The implementation of the COIL itself is still in development and not the subject of this article.

The project team worked closely with students on the development and research into the use of the tool and the impact of the project, with weekly meetings on the development of the missions and the design and layout of the learning tool taking place over four years. As a result of student feedback and co-creation activities, the learning tool has evolved through the redesign of the project mascot, the migration from text-based missions to more interactive units, the enhancement of the gamified elements, and the enhancement of the graphic design elements.

3 The research phase

The research methodology is structured as a case study of a co-creation project with students, in one UK institution and its French partner, using a mixed methods design for the collection of data. The research, through an in-depth case study, sought to understand the role of collaborative and peer learning, particularly mutual learning, as well as cross-cultural learning that could be achieved amongst students in the co-creation of learning resources.

The key research aims for this stage of the project focused on:

1. Understanding the students' experiences as co-creators on such an initiative.
2. Assessing student perceptions of working across cultural boundaries and building transferable skills and digital competences.
3. Evaluating the usefulness of a gamified approach to the design of an online educational environment.

The project team's research aim was twofold: to explore how gamified digital learning tools and spaces enhance learning for participants and to explore how peer collaboration and learning enhance the student learning experience. The research was designed to address questions of how students experienced informal and gamified tools and spaces for learning; how student participants responded to and benefited from a co-creation space; what contributions in such collaborative spaces could be made to learning, with a focus on the development of transferable skills; and how co-created gamified digital

activities could enhance learning spaces. The project team were interested in understanding how participatory and collaborative learning tools and spaces, through the development of agency, could enhance the potential for self-formation and the development of transferable skills for the participating students. There were three distinct phases of the research and data collection: developing the learning tool, testing its usability, and evaluating the participatory experience.

The research sites were located in higher education institutions in the UK and France. The data were collected over the period of design, during the piloting of the project and the development of the learning tool, and at the completion of the project. Within the participatory design research tradition, the researchers are embedded in the co-design teams and act as equal partners within the team environment. However, the researchers also acknowledge that during the data collection phase, their positionality can be perceived differently by the participants. The researchers implemented a series of practices to ensure that the democratic and distributed leadership ethos was maintained as much as possible, even during the research phase, and this included the fact that the student co-designers also acted as co-researchers and contributed to the data collection and the dissemination of findings. The researchers ensured that all participants were equal partners in the design process and that the student co-researchers were part of the evaluation process. In addressing issues around their positionality, the researchers reflected on methodological matters, contextual issues, and personal perspectives affecting the research activities associated with the project (Olmos-Vega et al., 2023), particularly the impact of their roles as academics with long-standing expertise in digital media and cross-cultural communication research. This possible limitation was mitigated by empowering the core student co-developers and ensuring reflexivity on their positionality (Schiffer, 2020). The data consists of visual documentation of the co-creation workshops and recorded interactions, field notes and observations, researcher diaries, semi-structured individual interviews with staff and students, and focus group interviews. The evaluation phase of the learning tool was also conducted in partnership with two student co-researchers and in focus group workshops that were conducted in 2023, 2024, and 2025 in the UK and France. The data were analyzed through a reflexive thematic analysis approach (Braun & Clarke, 2021) within the framework of interpretative research. The project team familiarized themselves with the data and developed an understanding of the findings through reading and re-reading the transcripts and reviewing the visual data and interactions, working both separately as individuals and together as a team. The interview data was then coded through themes and sub-themes. Through a thematic analysis of the data, a complex and rich picture

of the findings was built (Braun & Clarke, 2019, 2021). This article focuses on three of the overarching themes drawn from the coding process:

- “Mutuality and the relational space,” deriving from sub-themes on mutual learning, communication among co-designers, and relationships among students, academics, and other professionals.
- “Democracy and collaboration,” deriving from sub-themes on the value of equal participation in the design process, the value of collaboration and of the actual co-design process, and the methods that enable collaboration.
- “Agency and representation,” deriving from sub-themes on feelings of empowerment and belonging and the importance of equal representation when designing e-learning.

The project sought to inform educators about the development and understanding of participatory design as a research method and as an approach to designing a learning tool for students through co-creating the tool with students.

Ethics approval was granted through the institutional research ethics committee, and the British Educational Research Association (BERA) guidelines were followed in seeking written informed consent from all participants. Informed consent was sought prior to the collection of any data and explicit consent was sought with regard to the use of visual data. All data has been anonymized and kept in accordance with GDPR legislative requirements.

4 Findings

The analysis of the data regarding the aspects of peer learning and co-creation was framed within the qualitative tradition. Analysis of the data was undertaken through a reflexive thematic analysis approach (Braun & Clarke, 2021). The analysis revealed several key themes related to peer learning, such as the importance of developing digital skills in relation to employment, mutuality, and the relational space, democracy and collaboration, and agency and representation.

Central findings included the importance of building communities and bridging barriers using gamified digital tools and the value students place on collaborative work with academics and professional services, underscoring the importance of a third space approach in building a democratic space for student learning.

The article offers insights into the analysis of the overarching themes that arose from the analysis of the data, aiding the researchers in framing a consolidated analysis of the themes. These were identified as mutuality and the relational space, democracy and collaboration, and agency and

representation. These themes confirmed the relevance of the third space theoretical framing of the research and the analysis of the data, in which the invisible become visible and the silent are heard. Students confirmed the concept of “becoming visible” in various ways but the emphasis on the importance of relationships and dialogue formed an overarching theme, generating a need for identifying mutuality and relationality in learning spaces through a peer learning context.

4.1 Mutuality and the relational space

The findings demonstrated that the skills developed by students acting as co-designers in the project led to a collaborative space that involved more peer learning than expected. The data evidenced this peer learning at all levels of participation, amongst the student co-designers, the student co-creators, and the student co-researchers. The collaboration enabled the co-creators to engage with all the peer learning, and students developed the sort of transferable skills that the project team were hoping to encourage. There was evidence of the highest level of peer learning amongst the co-designers as well as evidence of the highest impact in terms of the development of agency and transferable skills. This reflected the mutuality of the space. The data, particularly the observation and visual data, demonstrated that acting as co-creators had the effect of building confidence for participating students and the distinction between the roles of teacher and learner melted away. The students expressed their appreciation for the opportunity to act as co-creators; again, this had the greatest impact for those students participating in the research project as co-designers and co-researchers. The following excerpt illustrates how the mutual exchange between students is critical to the learning process and represents the views expressed by students on the peer learning achieved:

It was really nice to see, to be involved in the **process of collecting feedback and collecting inputs from students and again presenting** them because this is something we built ourselves and **being able to present it to people and receive their immediate reactions** to it. It sort of gives a rewarding feeling to what I have been doing. (Co-designer, International Student P)

This comment on seeing other reactions to their work and the experience being rewarding underlines the ownership that the students took in terms of their participation in the project. It also demonstrates the confidence the students gained as a result of their participation in the project.

The experience of designing a learning tool centered on student needs, created by students for students, was mentioned specifically by the students in the UK and by the international students from France when a hybrid workshop was held in the UK with students from France:

I think the involvement of students has been very important to the creation of the whole thing; as a digital design student myself, we have a lot of emphasis on user experience design these days. So in this scenario the users are students. So when we directly interacted with them [student co-designers], we got to know what they really wanted and what they really enjoyed.
(Co-designer, International Student P)

This excerpt underscores the mutuality of the learning spaces in which the flow of information is between creator and user. In this instance, both are students and both are learning from each other in a peer learning context. Traditional learning spaces rarely recognize this mutuality in the learning environment and how this shapes the experiences of collaborators and users. Similarly, this context allows teachers insights into student perspectives of “what works” for their learning, but this is only achieved through the peer learning dynamic.

4.2 Democracy and collaboration

The expression of and incorporation of the users’ views on the learning tool was democratic and collaborative, as every student voice was listened to and students developed the tool by participating in a democratic approach, acting on the view held by the majority, and taking a dialogic approach to the creation of the tool. The data evidenced that the development of the tool was reached through and with the direction of others; views were then sought on the development and tested on the end users, on the students by the students. The visual data evidenced the collaboration between all parties. It showed that staff and students shared the space in a collaborative format that promoted a democratic learning environment. It was not immediately discernible from visual observations who was leading the discussions, whether it was a member of staff or a student standing at the front of the class: in one discussion it was a member of staff and in another it was a student, underscoring the collaborative democratic space in an observational analysis.

Another co-creation workspace has students and teachers alongside each other. The seating and placement are democratic in the sense that no visible hierarchy is displayed and again there is no obvious identification of the group members in terms of whether they are a member of staff or a student.

The locations of the workshops (as there were two different international locations for data collection) and the nationalities of the students were also not immediately apparent through visual observation. This further contributed to our understanding of the democratic aspect of the learning spaces for co-creation. The shift in roles from teacher to student, creating a role-reversed learning space, was also seen in the responses from the student co-creators:

Now, sometimes the people that are teaching the teachers are the students... But at the same time you also need the feedback. You also need us to tell you what we do like and don't like, otherwise it's not going to work. It is a two-way street... (Co-designer, UK Student J)

The next excerpt shows the collaboration of students across subjects and skill sets:

I have learned things from P of how she's been able to do all the digital media side of things and I'm hoping that she's been able to take some skills from what I can do as well so... (Co-designer, UK Student J)

The international students reflected on the openness of the democratic space offered by peer learning.

Student 1: **I think the games keep people entertained, they feel more comfortable** and maybe they are **more open** ... Yeah. And there is **more space for sharing** and maybe feeling like I can say something that you really wouldn't see in a serious situation. (French and International Students Focus Group 3, 2024)

Student 2: Yeah, yeah, yeah. It's a really good way to know to make, to create an **inclusive atmosphere of learning**. (French and International Students Focus Group, 2025)

Here we see the emphasis placed on openness and sharing, with a comparison made to an undescribed "serious situation"; the context implies a didactic and uncollaborative learning environment. The engagement with the gamified digital tools and the discussion of them in peer groups created an inclusive learning space in which emphasis was placed on sharing and involvement and creating learning tools that they thought other students would benefit from.

4.3 Agency and representation

The findings from the focus groups and co-creation workshops, with students from diverse backgrounds and from different levels of study, underlined the importance of developing such activities, as well as the potential for developing cross-cultural skills through the collaborative space. This was particularly witnessed in the international groups in France, with students from France, North America, and Italy working in mixed cultural groups. The students were seen to embrace the development of cross-cultural missions and content, with evidence of genuine enthusiasm expressed at the opportunities to co-create cultural activities for future students. They went beyond mere enthusiasm in their discussions, evidencing how the exchange of experiences and working together on cultural scenarios for use in cultural awareness activities made them consider issues of difference in individual approaches to cultural differences. The excerpt below offers an insight into collaboration and co-creation in relation to developing students' cultural awareness skills:

... when I was in Germany, we had one class where we were like, co-creator, and we had to do research before and then talk about it. And I really, like I learned way more than the other classes because when you just listen to someone, then you also don't really remember everything because we're not always focused. (Co-creation workshop, France 2025, Student G)

The following excerpt demonstrates that the approach taken, including the students as partners and as co-creators in the design and development of the project, resulted in a transformative and agentic experience for those involved:

So definitely I think there was a huge difference coming here, not just in the project, in the way things are taught in ... I think there's involvement of both students and teachers. So firstly, I'd say because I studied my undergraduate degree in Nepal. So, there was a bit of a gap. Coming from my school level education to undergraduate, there was a very visible gap because teachers and students used to be very different entities ... And gradually I felt more sense of belongingness even with you guys of, of course, it shouldn't be that way. But I don't know. It's something that happens when students come far away from their family. It feels like you're differentiated by some sort of, I don't know. **They're sort of ice between. And that gradually broke. And I could become myself. And I felt more confident in what I was doing.** And obviously this was a new challenge for me as well. I have not done this. (Co-designer, International Student P)

When the student referred to "you guys," she was referring to the project leads, who were senior members of academic staff. At the beginning of the project, the student was extremely shy and reluctant to speak out. We witnessed the development of her confidence and "being herself" as a consequence of the collaboration with others and the democratic learning spaces.

Like e-learning development or just like the new form of learning these days, because everything is been put online ... So I with my research I can see there's a huge market for it and I have learned a new software entirely and I think ... With doing this I have built so much skills within myself. **Being creative is one thing, but when you're put into a challenge and you have to use that to build something, it really exercises every skill you have.** So in that way I think I have built a lot of skills which will help me in my career... (Co-designer, International Student P)

This final excerpt shows the agentic development and self-formation of the student as a co-designer and co-researcher. Through the process of reflecting on their self-formation, they recognize the skills they have acquired through their engagement with the project and through their discussions with other students in a co-creation space.

The students in France and in a workshop in the UK with the French students tested the useability of the gamified inclusive leadership activities, providing insights into the effectiveness of the online approach. In the second group in France, whilst there was some commentary that the group would like more gamified activities, they recognized that the representation of cultural scenarios was an important learning tool and that some students particularly felt aided in reflecting on the cultural experiences they had encountered. This was due to the representative nature of the activities.

It helped me to recognize ... I realize that is what happens in another country ... I recognize feeling lost and I felt very afraid when I had a call with Spanish people ... it was difficult to have the confidence ... **I saw myself in this scenario** ... **this activity helped me to reflect on this is what happened to me** when I worked in another country... (Co-creation workshop, France, 2025, French student T)

The activity illustrated in Figure 5 provides an example of the way a student co-creator designed scenarios of representation for students who would use the learning tool. The scenarios were drawn from the student's experiences as a postgraduate student from Nepal working in a British office, and they were developed into an activity called Working Across Boundaries, illustrated in Figure 5. This added another peer learning dimension to the project.

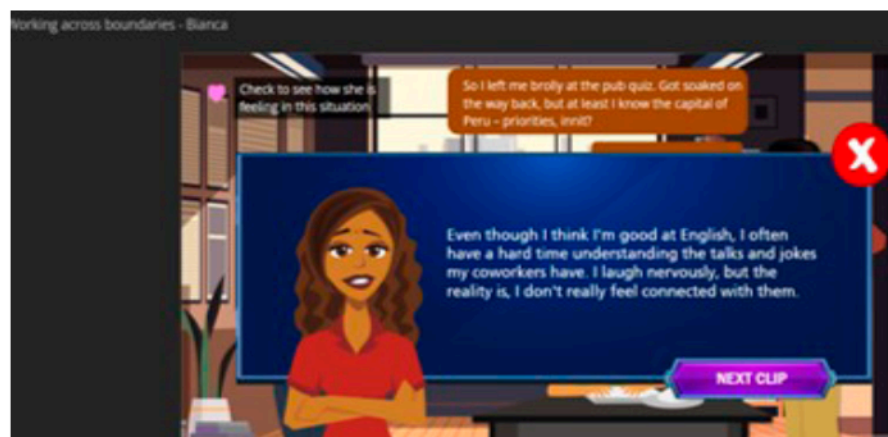


Figure 5
Working Across Boundaries screensbot – representation

Not all students had encountered a workspace where they engaged with cultural differences, but for those who did, the feedback on the useability of the tool identified that the activity aided their reflection and cultural learning. For the others, it provided an accessible online example with which to further their understanding of cultural differences and insights into scenarios they would encounter outside the university environment.

5 Discussion

The data showed the breadth of the collaborative learning and engagement that took place. It allowed the researchers to address how the findings speak to the research aims of understanding the role of peer learning, particularly mutual learning, and understanding how learning across cultures could be achieved amongst students in the co-design and co-creation of learning resources. It provided insights into the ways gamified digital learning spaces enhance learning both for those using the tool and for those creating it. The data showed how peer learning provided a space that amplified student learning in ways that more traditional subject-based learning spaces could not. In terms of the project findings, the research aims were found to be intertwined, as the co-creation of the learning tool was an integral aspect of the collaboration and peer learning. The findings suggested that both could be framed in a third space context. Furthermore, the findings offer insights into the experiences of culturally diverse cohorts of students (Mittelmeier et al., 2023) and the ways in which a collaborative and peer space can be seen to be both supportive and developmental. Through the dialogical and relational element of the project, we were able to define the roles and practices around the learning tool as a third space learning opportunity because of the blurring of the boundaries with regard to the traditional student-teacher relationship, the crossing of international boundaries and traditional classroom spaces, and the broadening of what can be seen as the normative realm of academic activity.

The question of how students experienced informal and gamified spaces for learning was addressed through how the data evidenced a strong dialogical and relational element to the project, producing a collaborative space driving the peer learning. The data on how collaborative spaces could contribute to learning, with a focus on the development of transferable skills, was particularly seen in the responses of those students acting as co-researchers and co-designers, who confirmed how they had acquired new skills and learned from each other as a result of the co-creation process. This collaborative and democratic space was so strong that we witnessed a role transference, a third space way of being for the students working on the project, as well as

the staff. This might also be seen as a cross-cultural shift, with both students and teachers learning these new ways of being in an educational space. The intervention aided in building student confidence and recognized student contributions to their own learning development. It presented opportunities to move across academic boundaries through extracurricular activities and develop a range of different skills, including employability, citizenship, and cultural skills, offering a third space for students outside subject and discipline boundaries.

In terms of the question of how co-created gamified digital activities could enhance learning spaces, the data presented strong evidence that such an approach offered flexibility and a possible “fun” aspect to learning, again reinforcing the third space context. The co-creation and leadership activities conducted by students in the development of the project equipped them with a variety of digital skills that map the various aspects of digital competency outlined by the EU Digital Competence Framework for Citizens (DigComp); the proficiency level of skills achieved is equivalent to “advanced” and often to “highly specialized” as defined by Vuorikari et al. (2022). Participating in the co-design process and having an opportunity to embed the student viewpoint in the making of a gamified learning experience also resulted in a sense of empowerment and agency (Bamford et al., 2022; Glas et al., 2019).

Moreover, the collaborative approach to developing gamified digital activities was seen as particularly effective for developing cross-cultural skills. The students in the UK groups wanted more opportunities for embedding cross-cultural content throughout the project intervention for use online and volunteered for more design workshops to enable them to co-design cross-cultural content. Whilst the UK students came from diverse cultural backgrounds, they also included a wider involvement of international students in the co-design of cross-cultural missions. The international students considered such activities to be the most appropriate approach to cross-cultural learning and were enthusiastic about being involved in the co-creation of such activities. Many viewed them as representing real experiences that they had not yet had an opportunity to reflect on.

Conclusion

The development of cultural awareness learning tools, co-created by international students in international settings, offers new perspectives on peer learning in the co-construction of digital gamified learning activities. The research offers new insights into the ways in which democratizing the learning space through the co-construction and co-creation of learning

tools can be viewed as both contributing to and extending the reach of the peer learning process, as well as furthering the understanding of learning in international settings.

While we acknowledge the limitations of the study, in terms of being applied to two specific institutions and of embracing a methodology with a focus on the perceptions of the co-designer and participants, the research project has brought important elements into focus on the benefits and challenges of developing innovative approaches to broadening the curriculum and developing students' transferable skills. It has underlined the importance of considering democratic approaches to the development of learning tools. The project offered opportunities for peer learning, through its participatory and gamified approach, that more traditional subject-steeped curricula would not. The intervention and findings from this project offer insights into student spaces and negotiations that can further understanding of the development of student agency and transferable skills. Through its participatory and gamified approach, the intervention itself offers an example of ways that higher education can offer relevance for the 21st century. The third space framing of the project is critical to understanding the expansion of the learning space within the digital environment, moving across boundaries from the conventional higher education space. We saw that traditional educational roles for staff and students around transitions, partnership, community, and professional practice were flipped. Through the third space framing, we witnessed learning pushed into an unexpected dimension in which boundaries can be defined as fluid and where learning roles sit in an in-between space. We also witnessed the development of cultural awareness and cultural confidence in the collaborative groups as a result of participation in the co-design of cultural awareness activities. We further witnessed a general impact on the development of transferrable skills, confidence levels, and the bridging of subject boundaries as part of that development. As a result of peer learning, students became agentic and self-forming learners. Furthermore, the international dimensions to such gamified digital spaces provided opportunities for extending the international impact and educational outcomes for participating students.

AI Use Statement

The authors declare that no AI tools were used in the creation of this manuscript.

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