Exploring the spatial belonging of students in higher education

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Exploring the spatial belonging of students in higher education

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ABSTRACT

This paper presents a conceptual framework of spatial belonging. The aim is to enrich our conceptual understanding of space and belonging in higher education, with a provisional spatial belonging framework for researchers and practitioners to critically reflect on the different ways in which higher education spaces can facilitate and shape belonging and inclusion for students. Understanding spatial influences on student belonging is key to appreciating the nuances and multidimensionality of their experiences, especially for underrepresented students whose belonging at university is often more precarious. Drawing on theories from education, sociology and geography – especially Foucault's (1986. "Of Other Spaces." *Diacritics* 16 (1): 22–27) heterotopia, Lefebvre's (1991. *The Production of Space*. Oxford: Blackwell) spatial production, Massey's (2005. *For Space*. London: Sage) spatial relations and literature on spatial justice – four dimensions of spatial belonging are proposed as a lens to better recognise the influence of multiple spaces on student belonging. The physical dimension includes the material and visible aspects of space and how that can shape student experiences and belonging, while the digital dimension considers the role of technology, especially virtual learning and hybrid spaces. The relational dimension highlights the importance of social relationships and connections, which transcends physicality and digitality, and likewise, the structural dimension focuses on the wider societal system and how dominant discourses shape the way space is experienced by different students. By examining the physical, digital, relational and structural spaces, the spatial belonging framework provides an innovative conceptual insight into student belonging in higher education. This paper lays the groundwork for future research to examine how multiple spaces intersect and contribute to student belonging.

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Introduction

Belonging is a complex and multifaceted concept that has received considerable attention in higher education research (Gravett and Ajjawi 2022; Thomas 2012). Student belonging has been highlighted as an important component for their integration and success, both in experience and outcome (Strayhorn 2012), especially for underrepresented groups (Hurtado and Carter 1997). For many students, a sense of belonging is essential to their engagement, self-confidence, mental health and wellbeing, and academic success (Ahn and Davis 2020). While social and cultural factors have been studied in relation to student belonging, less attention has been given to the

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role of space (e.g. Samura 2018), which arguably conditions and governs the sites and circumstances of the student experience. The concept of space is popular in disciplines such as architecture, geography, philosophy and physics, yet its connection to student belonging has not been fully explored in educational research. Although the multifaceted nature of learning spaces has been examined (Ellis and Goodyear 2016), there is limited emphasis on how different university spaces shape student belonging.

In this conceptual paper, we develop *spatial belonging* as a working framework to illuminate the complex ways in which students experience belonging in higher education, focusing on the influence of different spaces. A critical and reflective awareness of the spatial influences on student belonging is important to appreciate the nuances and multidimensionality in the students' lived experiences, which is especially important for those from underrepresented backgrounds. Below, we begin with an overview of belonging research in higher education, particularly the emergence of spatial scholarship. The conceptual foundations of *spatial belonging* are then presented, drawing on spatial and belonging theories from the social sciences, especially that of Foucault (1986), Lefebvre (1991) and Massey (2005). Informed by these ideas and existing literature, we present four dimensions of spatial belonging, exploring the physical, digital, relational and structural dimensions of space that shape student belonging. The proposed framework is underpinned by a sociological perspective, focusing on the societal and systemic factors that shape the way space influences belonging. We conclude with a discussion of the potential implications, including areas for further development. Ultimately, this paper aims to enrich our theoretical understandings of space and belonging in higher education, with a spatial belonging framework for researchers and practitioners to critically reflect as well as to enable the creation of a more inclusive and supportive environment for all students.

Emergence of spatial scholarship in belonging research

While there are multiple definitions and conceptualisations of student belonging, it is broadly understood as 'the extent to which students feel personally accepted, respected, and supported by others (Goodenow 1993, 80). Like Gravett and Ajjawi (2022), we do not view belonging as neutral and belonging ought to be understood as 'situated, fluid and sociomaterially constituted' (2022, 1193). Student belonging is influenced by multiple and intersecting factors, such as individual characteristics, institutional practices and social contexts (*see* Raaper 2021s special issue introduction). Ahn and Davis (2020), for instance, identified four domains of belonging, including academic engagement, social engagement, surroundings, and personal space.

The relationship between space and belonging is complex and multifaceted, encompassing not only physical and campus spaces, but also digital spaces, social networks and cultural practices within higher education institutions. Understanding the interplay between these factors is crucial for creating inclusive and supportive learning environments that promote positive academic and social outcomes for students. There has been growing interest in the role of spatial factors in shaping student belonging, especially in light of the coronavirus pandemic. During the peak of the pandemic, most university teaching and student support infrastructures shifted online, both in the UK and globally. Physical campus spaces and buildings for study or social activities were restricted or unavailable. However, as in-person education gradually resumes, albeit with blended or flexible learning approaches for some, the spaces in which students can develop and maintain their belonging remain precarious. An increasing body of literature suggests that both physical and digital spaces can shape students' belonging and connectedness at university. By attending to these spatial dimensions, we can better appreciate the complexity between space and belonging.

Research on space is diverse and the spatial belonging literature is dispersed across the social sciences, with research predominately from the discipline of geography (e.g. Jones 2007; Massey 2005) and increasingly from psychology (e.g. Gray and Manning 2022) and sociology (e.g. Fuller and Löw 2017). In comparison, educational research exploring the concepts of space and belonging

is relatively limited (e.g. McCrone 2021), as most similar studies have focused on learning spaces (e.g. Elkington and Bligh 2019). For instance, Bligh and Crook (2017) discussed six interrelated functions of learning spaces, including social integration, cognitive integration, association, stimulation, enablement, and transparency. In Ellis and Goodyear's (2016) review of higher education learning spaces, three dimensions of research on learning spaces were identified, namely formal and informal; physical, hybrid and virtual (*see also* Nørgård 2021); and those provided by the university, third-party or personal/self. These learning spaces often intersect, such as formal physical spaces on the university campus, or informal virtual spaces facilitated by third-party technology and digital platforms (e.g. Goodyear 2020). Research on classroom and teaching spaces has also considered spatial arrangements, including sensory factors like lighting and temperature (UCISA 2016). Beyond the classroom, studies have explored the role of the university campus, especially as a space where students can develop belonging (e.g. Samura 2018; Temple 2018).

Although students and staff may have different spatial preferences for learning and teaching (Jessop, Gubby, and Smith 2012), building refurbishments and spatial rearrangements can improve or enhance student experiences and belonging on campus (Morieson et al. 2018). For example, Carnell (2017) found that students' familiarity with particular spaces was central to their development of emotional attachment and a sense of community, belonging and togetherness. According to Mulrooney and Kelly (2020), the theme of belonging, particularly the feeling of being 'at home', is one of the most significant aspects of student perceptions of the university campus. The authors argued that students' relationship with physical spaces on campus are primarily emotional, which influences their feelings of belonging. In other words, the lived experiences of physical space are intimately connected to feelings, emotions and social relationships, shaping how students feel or have felt in specific spaces and localities (Finn and Holton 2019).

Like the concept of belonging, research suggests that student experiences of spaces on campus are far from neutral or uniform. The design and functioning of university spaces can reflect and perpetuate social hierarchies and positionalities that favour certain students over others. For example, Andersson, Sadgrove, and Valentine (2012) argue that the university landscape is often conceived with white, middle-class secular students in mind, potentially excluding non-dominant cultures and practices. Similarly, Mallman et al. (2021) find that the campus can be exclusionary for certain students, as it typically reinforces dominant discourses and ideologies, such as in student accommodations (Holton 2016). Hopkins (2011) highlights the contradictory and complex nature of university spaces, as experienced by Muslim students in a UK university. While these spaces can foster a sense of community and belonging, they are also influenced by wider societal issues and government policies that can create a hostile environment for some students. Isci Pembeci's (2019) study of Kurdish students in Turkish universities similarly suggests that political ideology and nationalism can negatively impact student experiences on campus. It is also important to note that campus spaces are not the only spaces that contribute to student belonging. Digital spaces, such as online learning environments and social media platforms, have become increasingly important in higher education, particularly since the pandemic, blurring the boundaries between physical spaces and virtual places (*see* Barnacle 2016s special issue introduction; Gravett et al. 2022).

Together, these studies demonstrate how university spaces can be experienced as safe and comforting for some students, but not for others. It is therefore important to recognise the different spatial dimensions of the university that shape student belonging and experiences. Building upon previous scholarship, this paper aims to enhance the conceptual literature by emphasising the significance of space in student belonging.

Conceptualising spatial belonging

In this section we focus on spatial theories that can help us to better understand the complex relationship between space and belonging. In line with emerging scholarships, spatial theories offer a more nuanced understanding of how space is constructed, contested and experienced. We

draw on the works of Michel Foucault (1970; 1986), Henri Lefebvre (1991) and Doreen Massey (1994; 2005), amongst others with a focus on spatial justice, to explore the theoretical merits and foundations in conceptualising spatial belonging. By examining how space is produced through social relations and power dynamics, we uncover the different ways in which students are included or excluded from particular spaces in higher education.

Foucault and heterotopia

Foucault (1970; 1986) presented the concept of *heterotopia* to highlight how space is interlinked with power, as distinct spaces that seemingly function or operate in ways that are different to dominant norms and discourses. Heterotopia is also referred to as 'counter-sites' because those spaces tend to deviate and operate with different or alternative rules and practices. The concept of heterotopia allowed Foucault to explore the ways in which spatial practices are used to reinforce or disrupt existing power relations. Through the concept of heterotopia, Foucault explored spaces that challenge dominant spatial norms as these liminal spaces provide occupants with the opportunity to construct and establish their own identities and belongings that are not predetermined and reinforced by dominant discourse.

Foucault (1986) described several forms or 'principles' of heterotopias, setting out the breadth and domains in which these spaces of disruption are embedded within different segments and cultures of society over time, including in education (Tamboukou 2004). These principles of heterotopias include: crisis or deviation, juxtaposition or contradiction, accumulation (or 'slices in time'), exclusion or conditional, and illusion or compensation. Further explanations are widely discussed elsewhere (e.g. Sudradjat 2012) but it is useful to note that Foucault used examples and analogies that referenced the prison, psychiatric hospital and the cemetery. These counter-sites are present throughout modern Western societies, even if some exist outside of the conventional systems of space and classification. In short, heterotopias are spaces of disruption or deviance that can either challenge the dominant practice or that it effectively operates with its own rules or norms.

The higher education sector can arguably be seen as a heterotopia of exclusion or conditional heterotopia (i.e. spaces that regulate and control individuals' behaviours, as discussed by Blair 2009, regarding further education colleges). Foucault's concept of heterotopia has the potential to enrich our understanding of how university spaces are experienced and interpreted by different students, especially to counter dominant practices and their conceived purposes (c.f. Lefebvre 1991). University spaces are distinct places with degree awarding powers for post-compulsory learners, alongside research development and knowledge contributions to society. As a sector, higher education can appear to operate with its own rules (e.g. specific admissions policy for students, 'publish or perish' culture for academics). The lens of heterotopias could prompt a more critical reflection of how universities structure and regulate their spaces for students, and the extent to which students, especially from underrepresented backgrounds, can create or access alternative spaces that reflect their values or interests. By recognising how power operates in various spaces for different students, we will be in a more realistic position to design and conceive spaces that are more inclusive to diverse students.

Lefebvre and spatial production

Similarly, Lefebvre's (1991) theory of spatial production is highly relevant in conceptualising spatial belonging because the premise foregrounds space as being unneutral as well as actively produced and contested by different social groups. Following Foucault, Lefebvre (1991) viewed the production of space as underpinned by power relations, struggles and conflicts, which often result in social inequality. For Lefebvre (1991), space is intricately and continually shaped through social processes, especially the 'spatial triad' of conceived, perceived, and lived spaces, which disentangles how different spaces are viewed, interpreted and experienced.

The conceived space (or *representations of space*) is 'tied to the relations of production and to the "order" which those relations impose, and hence to knowledge, to signs, to codes, and to "frontal" relations' (1991, 33). It refers to the planned purpose or design of the space (i.e. how it was intended to be used), including underlying visions of those in positions of influence or power in the creation of space. The perceived space, or *spatial practice*, refers to the common practices and normalised functions of the space, constituting the dominant discourses of the space (i.e. what is seen and how it is commonly viewed or used). For Lefebvre, the perceived space enables social functioning and continuity by embracing spatial 'production and reproduction, and the particular locations and spatial sets characteristic of each social formation' (1991, 33). The lived space (or *representational spaces*) acknowledges the subjective individual spatial experience – and what Lefebvre calls a space 'directly *lived* through its associated images and symbols, and hence the space of "inhabitants" and "users"' (1991, 39). The lived space refers to how meaning is attached to spaces through subjective experiences and feelings (i.e. how it is actually experienced), which can vary by social locations and contexts (Kellock and Sexton 2018).

Lefebvre (1991) argued that the *conceived-perceived-lived triad* should not be treated as independent domains or an abstract model, but rather as interconnected where individuals 'move from one to another without confusion – so much is a logical necessity' (40). In other words, these three interrelated domains of space encompass our holistic experiences of the social world (Watkins 2015). For higher education students, the design, structure and functioning of university spaces can therefore shape different opportunities (and lack thereof) to develop belonging (c.f., Andersson, Sadgrove, and Valentine 2012).

Massey and spatial relations

According to Massey (2005, 9), space is a continually unfolding processual 'product of interrelations', shaped by and shaping social, economic and political factors (Fuller and Löw 2017). Space is a socially produced construct, which is neither fixed nor static. In other words, space is a lived reality interconnected with time, influencing our experiences, identities and access to resources and opportunities, all of which are also interlinked with societal structures and inequalities. Like Foucault and Lefebvre, Massey's (1994; 2005) work is interested in power and spatial relations, especially how dominant groups can control and dominate the available or accessible spaces, and in turn shape and live such spaces in ways that may be incompatible, difficult or even hostile for underrepresented groups. Spatial relations can potentially mirror and perpetuate broader societal disparities, including those related to gender, social class and 'race'/ethnicity (e.g. Flint 2021; Trawalter, Hoffman, and Palmer 2021), as well as other dimensions of identity and circumstances (e.g. student carer or parent, commuter student, local stay-at-home students, *see* Finn and Holton 2019).

Massey's work thus challenges us to rethink our assumptions about space, time and power, and to recognise the possibilities for radical change that emerge when we contest hegemonic spatial orders and imagine new ways of being in the world. These ideas resonate with wider debates that seek to unravel the complex interplay between spatiality and social life, and challenge dominant understandings of power and social order. It is plausible therefore that different spaces can offer different opportunities and conditions for belonging to develop, reflecting wider social relations and power dynamics (Gravett and Ajjawi 2022) as well as an individual's social backgrounds and dispositions.

Spatial justice in higher education

Whilst it is not possible to discuss the work of all relevant writers, Soja's (2010) theory of *spatial justice* is of particular interest, offering another valuable lens to explore how spatial dimensions can support or hinder the participation and engagement of university students from diverse backgrounds. For example, we could examine if the layout of the campus is accessible for all students, question if

the social spaces are inclusive, and whether the buildings or facilities – such as their opening times, designs and conceived functions – sufficiently cater for the needs of students from different backgrounds. Focusing on spatial inequality, Puwar (2004) conceptualised space, such as the university campus, as being gendered, classed and racialised, identifying certain bodies as being the 'somatic norm' and others as 'space invaders' (9).

For instance, in their theory of racial space, Neely and Samura (2011, 1938) argue that space has four fundamental features: it is 'contested … fluid and historical … relational and interactional, and … infused with difference and inequality'. While their focus is on the dynamics between race and space, these features have been explored in different ways in existing studies on student experiences, belonging and campus spaces, highlighting unequal access and utilisation of university spaces (Samura 2018). Relatedly, Ahmed's (2004) work, particularly the notions of *affective economies*, delves into the emotional aspects of belonging across different spaces such as feelings of comfort and discomfort, especially within the complex ways in which universities and their structures can reinforce dominant (yet unequal) practices.

In the higher education context, Temple (2018) argues that a place constitutes the meaning-applied fragments of space within a particular time. In other words, the university campus may consist of a diversity of spaces, but students can, through positive lived experiences of specific spaces, transform certain sites or locations into their own places with subjective meanings or emotions. According to Temple (2009, 145–146), 'better space … does not necessarily lead to better places … as attention needs to be focused primarily on the social relations involved, and how social capital may be created'. Here, social networks play a centra role in understanding the processes through which where space becomes place, recognising the importance of others, such as peers, in the co-creation of shared meanings at the university. In this context, social capital refers to social networks and relationships, and how people around us can shape or support our academic experience and success, including feelings of belonging (Mishra 2020).

The four dimensions of spatial belonging

Building on the aforementioned theories and literature, space is not regarded as neutral but are recognised to operate in explicit and implicit ways that reflect structural inequalities of power and privilege. At the basics, there is an observable, touchable or useable materiality of space, typically in the physical or digital forms. However, the designs and operations of these spaces are also imbued and conditioned within wider social relations and structures. It is therefore important to acknowledge and explore these different spaces in order to reflect on and enhance our approach to creating or managing various dimensions of space for belonging. This section proposes four interconnected dimensions of spatial belonging to enrich our understandings of student belonging within diverse higher education spaces. The spatial belonging framework is a work-in-progress and focuses on the physical, digital, relational and structural dimensions of space (see Figure 1). It is acknowledged that there may be additional spaces or spatial dimensions that shape belonging and the spatial belonging framework is open to further development.

Physical

The physical space refers to the material and tangible aspects of reality, including physical structures such as building and objects. It is unquestionably a fundamental aspect of belonging as material structures and objects provide a setting for students to develop belonging or non-belonging through sensory lived experiences. In the context of higher education, the physical space is created with intended purposes that are conceived and perceived (Lefebvre 1991). Traditionally, university spaces consist of buildings in close proximity that serve the functions of teaching and learning (e.g. classrooms, libraries, study or meeting spaces), research (e.g. laboratories) and administration (e.g. offices), as well as sites for social, cultural and recreational purposes (e.g. food

and beverages, faith and worship, sports and leisure, including the outdoors and landscapes – for example, *see* Thompson et al. 2023).

In other words, campus spaces are designed to enable and serve different purposes for students, ranging from formal to informal learning, as well as personal and cultural socialisations and developments. New students are expected to learn, embrace and embody the values and ethos of the university, which often leads to personal and emotional attachments through the developments of belonging and identity as legitimised members of the university (c.f. Foucault 1970). Consequently, the regulations and functions of the university and its diverse spaces are reproduced, effectively governing and influencing the actions that students should and can undertake within these sites and buildings, reinforcing and controlling the prevailing stereotypes of university structures, spatial arrangements and expected behaviours (Foucault 1986; Massey 1994; 2005). For example, libraries commonly feature quiet study spaces with established etiquettes rules, such as restrictions on consuming food, drinks and maintaining noise levels. Likewise, teaching classrooms have spatial constraints, with rules pertaining to maximum occupancy, as well as specific furniture and equipment that can limit the scope and possibilities of teaching and learning practices. Similarly, the presence of blackboards in mathematics lectures, or paints and easels in art studios, would be typical representations of the discipline and the spaces in which specific knowledge are taught, reinforcing their conceived and perceived purposes (Lefebvre 1991).

However, the lived experiences of physical spaces within universities can often be exclusionary and even elitist, which may be reflected in both the architectural structures and designs of the campus as well as the social and demographic backgrounds of the individuals who occupy them. The planning and layout of university spaces are not always neutral, inclusive or welcoming, especially for those from underrepresented backgrounds (Ellis and Goodyear 2016; Massey 1994). These physical spaces can be inaccessible or even hostile, figuratively in both material and social terms, from ease of access to feeling as part of the space and its surroundings (*see later* Relational space, c.f. Hopkins 2011; Morieson et al. 2018; Temple 2009). The designed functions and operations of campus spaces may not adequately serve the diverse needs of all students, such as those with mobility issues, commitment to religious practices, less common study times or styles, as well as those with caring responsibilities such as for young children, resulting in spatial injustice (Soja 2010).

Digital

The digital space refers to the virtual realms that are constructed and accessed through technology, typically via the internet and includes websites, social media and various online platforms and tools. The pandemic has undoubtedly accelerated the adoption of the digital space in higher education, building on the growing use and advancement of technology and technology enhanced learning, such as blended, flipped and hybrid learning (Castro 2019). The digital space for learning has expanded significantly as most, if not all, university courses or degree programmes now have a virtual presence. Enrolled students often have access to specialised virtual learning environments, with a range of resources and study options, including asynchronous and remote learning (Benavides et al. 2020).

The hybrid space, in particular, is noted as the intersection between the physical and digital space, where students can participate by in-person, online or both. The presence and absence of individuals in each space will afford different experiences and opportunities, including their participation and engagement. The rise of the digital space has a profound effect on student engagement and belonging, blurring the spatial boundaries for student belonging (Mendoza and Venables 2023). Outside of academic study, the increased popularity of social media, especially amongst the student population, has also broadened the digital spaces and opportunities where student belonging is shaped and influenced, including the social and personal side to being a higher education student (Cureton, Jones, and Hughes 2021). For students, the digital space has enabled their university experience to have a virtual as well as a physical dimension, with different spaces for belonging.

For most students, the flexibility afforded by technology, especially remote learning, has enabled more opportunities to participate, especially when there are other commitments, responsibilities or personal barriers (Meskhi, Ponomareva, and Ugnich 2019). Thus, removing the physical need to be present in order to participate provides an alternative way for students to develop belonging. However, like the physical realm, the digital space is not neutral either, with different types of inequalities of experience in terms of access, equipment and skills (Lee et al. 2022), from individual learning differences to wider structural issues and patterns. For example, those from lower socioeconomic backgrounds most likely disadvantaged in terms of digital access and literacy (Zhao, Pinto Llorente, and Sánchez Gómez 2021). Furthermore, the ability to be anonymous in the digital space, on social media platforms in particular, can also lead to undesirable or unpleasant interactions, which can negatively influence an individual's experience. That said, it is argued that the digital space forms a key dimension in student's spatial belonging at university.

Relational

The relational dimension refers to the quality of relationship between people, which can include with objects or linked to their beliefs, and more importantly how these connections shape their belonging. Here, the relational dimension operates across physical and digital spaces, with the emphasis on the different meanings that various spaces have for students as they develop their belonging. Conceptually, the relational dimension aligns with the notion of social capital (Mishra 2020), especially the significance of peers and social networks in student belonging (Temple 2008). These spaces of relations and connections are typically between the interactions of students themselves, but can also be with staff and the wider university community. As such, the relational dimension of spatial belonging is concerned with the quality of these relationships, which can have positive, negative or indifferent effect on student belonging.

The relational dimension can also include relations or connections that may be emotional or religious in nature, reflecting their values, interests or beliefs, as particular university spaces, sites or buildings may carry symbolic meanings, shaping student belonging (Mallman et al. 2021). For instance, these may be spaces of worship and leisure, or sites of social gathering or network, which may have personal and symbolic meanings as a space where belonging develop. For remote learning students, publicly available images or videos of their university campus and buildings can also symbolically serve as a space where personal relationships and belonging foster, especially in feeling as legitimate members of the university, even if they have not physically been on campus (Bayne, Gallagher, and Lamb 2014).

Relatedly, Gravett (2023) explored the notions of relational pedagogies and argued that as university learning spaces are situated within webs of interconnections, staff need to be reflective about their relationships and connections with teaching spaces and its environment, in addition to people. For example, teaching in a lecture theatre with tiered seating will likely reflect or create a specific relationship with and experience for students, which are qualitatively different when compared to seminars in smaller classrooms with roundtables (*see also* UCISA 2016). Here, the setup of teaching spaces can reflect the power structures and prominent pedagogies, which may align with the values and practices of some but not all students, and result in differences of learning experiences that can impact student belonging. Similarly, in the digital space populated with learning tools such as online videos, discussion forums and resource repositories, and social media more generally, the relationships student develop in and with these spaces will inevitably vary, reflecting personal interests and approaches as well as wider social inequalities (Soja 2010).

Structural

Informed by Foucault (1970), Lefebvre (1991), Massey (1994) and others alike on the view that space is not neutral but imbued within complex power relations, the structural dimension focuses on the

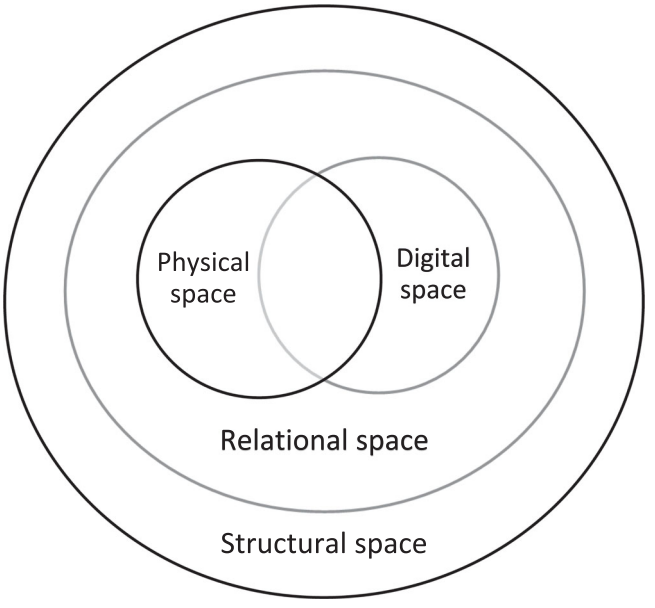

Figure 1. The Four Dimensions of Spatial Belonging.

societal structures and how dominant discourses shape the way space is experienced, which in turn can shape student belonging. The structural dimension operates at a higher level (see Figure 1) and considers how space, including physical, digital, relational and wider societal discourses and practices, are organised in ways that constitute the norm, but more importantly, whether or not such spatial organisation reflects broader social inequalities (Soja 2010).

The higher education space, arguably, is formed and structured through external and internal policies, permeated by different historical and political ideologies (Massey 2005). Over time, these processes are likely to have manifested and ingrained across many if not every aspect of university life, structuring the social and academic environments for staff and students (Foucault 1986). These may include, for instance, an institution's recruitment and admission processes or their teaching and learning strategies, including approaches to student support, inclusive practices and diverse curriculums, all of which can shape the experiences and belonging of students. The structuring of university spaces, as a reflection or reproduction of wider societal inequalities, is an important facet of spatial belonging to appreciate that different lived experiences, even for the same space, can be different for students from diverse and particularly underrepresented backgrounds (Puwar 2004). For example, the dominance of a demographic group, typically by gender and race/ethnicity in degree programmes, can result in a 'chilly climate' for those in the minority to develop belonging (Johnson 2012), such as minority ethnic women in computer science (e.g. Wong and Copsey-Blake 2022). The structures of these academic environments and learning spaces are central to appreciate the spatial influence to belonging.

Although structural spaces can serve as sites of oppression, they also have the potential to become spaces of resistance and opportunity (Soja 2010), where users and students can exercise agency to redefine existing rules and practices, thereby restructuring spatial boundaries. These alternative spaces, although may be limited in scale or temporary in reality, do align with Foucault's concept of heterotopia and the foundations of non-dominant spaces. It is important, therefore, to recognise how structural spaces function for different students across contexts and circumstances as alternative spaces may emerge or already exist to support student belonging. Engaging critically with structural spaces has the potential to encourage us to reflect on and reimagine how

empowering and inclusive spaces can emerge and evolve. The structural spaces within higher education will undeniably have an impact on student belonging.

Conclusion

This paper proposed a tentative conceptual framework of spatial belonging to better understand student belonging in higher education. Drawing on Foucault (1970; 1986), Lefebvre (1991), Massey (1994; 2005) and others (e.g. Puwar 2004; Soja 2010; Temple 2009), spatial belonging focuses on how our recognition of space and spatial influences on student belonging, especially since space is produced through power dynamics, structures and relationships. Four dimensions of spatial belonging are proposed, namely the physical, digital, relational and structural. It is important to note that these four areas are not meant to be a complete list of spatial belonging dimensions, but are intended as an important conceptual starting point to acknowledge the breadth of spatial influences.

For example, we know that our experiences of space are inextricably linked to time (e.g. Massey 2005), which means there could have been a temporal dimension in the spatial belonging framework. Yet, it is not discussed as a distinct area because the entity of time operates at a higher level, across the other dimensions. In other words, time ought to be a consideration across the physical, digital, relational and structural dimensions, such that no viable conceptions of space can exist without time. It is therefore more practical to consider time within each spatial dimension for contextual purposes. For instance, students in their final year are likely to view the same space differently when compared to their first year, due to changes in knowledge, experience and circumstances over time.

Furthermore, it is acknowledged that the current framework does not centre on the experiences of the individual, such as those related to cognition or the mind. Individual thinking or mental spaces are beyond the scope of this paper. It is conceivable that an individualised model of spatial belonging could centre on the individual, prioritising concepts such as spatial empowerment and oppression, where personal and lived experiences of space are the central focus, exploring feelings and emotions such as comfort, confidence, exclusion and marginalisation (Ahmed 2014; Mulrooney and Kelly 2020).

To appreciate spatial belonging, it is important to acknowledge the potential disconnect between the conceived, perceived and lived spaces, which may be socially patterned by wider societal and systemic inequalities. As such, universities must be attentive to the marginal as well as dominant spaces available to students to ensure that these spaces are accessible and welcoming, especially for underrepresented groups. With an appreciation of spatial belonging, universities can work proactively and concertedly to build spatially inclusive and supportive environments for students from diverse backgrounds. Here, belonging should be approached from a multi-spatial perspective, considering as a start the physical, digital, relational and structural dimensions. These dimensions are fundamental in our understanding of student belonging. The next step is to attest, critique and refine the framework with empirical evidence to deepen our understandings of spatial belonging in higher education.

Disclosure statement

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