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Teaching for Belonging: A Scoping Review of Strategies Used by University Educators to Support Student Belonging

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Abstract

Belonging is associated with student engagement, wellbeing, persistence, and academic success, yet evidence of how educators foster belonging remains fragmented. This scoping review synthesised 209 publications from database and grey literature searches, guided by Allen et al.'s (2021) framework. Findings were mapped and assessed using sentiment analysis. Two domains emerged: Opportunities (conditions for connection and participation) and Perceptions (educator support, classroom climate, and personal connection). Peer interaction and intentional learning design showed the strongest positive associations with belonging, while educator support and personal connection were key contributors. Online environments produced mixed outcomes, emphasising educator presence and structured interaction over delivery mode alone. This review identifies strategies for fostering belonging through peer interaction, relational teaching, inclusive classroom climates, transparent learning design, and purposeful online connection.

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Practitioner Notes

1. Create structured, low-stakes opportunities for students to interact and build meaningful connections with their peers.
2. Design learning experiences with clear expectations, appropriate scaffolding and accessible pathways for participation.
3. Make educator support visible through availability, responsive communication, personalised feedback and encouragement.
4. Foster inclusive, welcoming and psychologically safe classrooms where students feel recognised, respected and able to participate.
5. Design intentionally for belonging in both in-person and online learning, prioritising connection, clarity and educator presence.

Keywords

belonging; higher education; teaching practice; student engagement; inclusive pedagogy

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Introduction

Over the past several decades, universities have moved from relatively small, elite institutions serving a limited section of the population to large, broad-access systems characterised by sustained growth in enrolments. Universities now serve more heterogeneous student populations than at any previous time, encompassing students from varied cultural, linguistic, socioeconomic, and educational backgrounds (Kim et al., 2024; Reed, 2016). While the massification of tertiary education has increased access, it has also created learning environments characterised by larger cohorts and reduced opportunities for interpersonal connection (Hornsby & Osman, 2014; Pillay, 2024). These conditions challenge students' capacity to feel supported and socially integrated, with declines in institutional belonging and growing concerns regarding retention and disengagement reported internationally (Mulryan-Kyne 2010; Pedler et al., 2022; OECD, 2025).

Belonging is a fundamental human need, positioned by Maslow (1943) as essential to wellbeing once basic physiological and safety needs are met. Subsequent psychological research has further conceptualised belonging as a core motivational drive underpinning interpersonal attachment and social participation (Baumeister & Leary, 1995). Belonging's antecedents and associations extend across the lifespan and are particularly salient during periods of life transition, from adolescence (Wasif et al., 2026) to major life-course changes across diverse populations and cultural contexts (Counted et al., 2025). Entry into higher education represents one such transition, occurring at a formative period for many students and carrying implications for wellbeing and social integration that extend well beyond the university years.

Within educational contexts, belonging has been defined as students' feelings of being accepted, valued, included, and encouraged by others in the learning environment (Goodenow, 1993). Classroom belonging specifically refers to students' perceptions of relational connection with peers and teachers and their sense of being an important contributor to classroom life (Goodenow & Grady, 1993). Across schooling and tertiary contexts, belonging is consistently linked with enhanced academic motivation (Deci & Ryan, 2012; Osterman, 2023), engagement (Xerri et al., 2018), persistence (Strayhorn, 2020), achievement (Walton & Cohen, 2011), wellbeing (Van Kessel et al., 2025), and reduced attrition (O'Keeffe, 2013; Ajjawi et al., 2019; Middleton et al., 2021).

Research indicates that belonging operates across multiple interconnected levels within the higher education system. Institutional policies, support services, and campus culture provide important macro-level conditions that shape inclusion and engagement (Thomas, 2012; Kahu & Nelson, 2018). However, students most tangibly encounter and construct belonging within the microsystem of the classroom, where daily interactions with peers, educators, and learning activities occur (Xerri et al., 2018; Meehan & Howells, 2019). Relationships within this immediate learning environment are consistently identified by students as central to their university experience and sense of connection (Freeman et al., 2007; Komarraju et al., 2010). Yet, while institutional initiatives such as orientation programs, mentoring schemes, and wellbeing services are well documented in higher education (Thomas, 2012; Kahu & Nelson, 2018), the literature remains comparatively fragmented regarding how belonging is cultivated through routine classroom practice. A recent systematic review by Allen et al, 2024 highlighted a range of educator practices that foster students' sense of belonging, including creating opportunities for connection, demonstrating care, and supporting inclusion for diverse student groups; however,

this review considered only papers published in a single journal over the past 20 years, limiting the scope of evidence on effective educator practices.

Substantial work in primary and secondary school education has demonstrated the pivotal role of teachers in fostering belonging. Supportive educator behaviours, inclusive classroom climates, structured peer interaction, and autonomy-supportive teaching approaches have all been linked to stronger belonging and engagement among school-aged learners (Osterman, 2010; Allen et al., 2018). Self-determination theory further supports these findings by identifying relatedness, which is closely aligned with belonging, as a core psychological need underpinning motivation, alongside competence and autonomy (Deci & Ryan, 2012). In contrast, analytical synthesis of these processes within higher education classrooms remains limited. Although belonging is frequently measured as an outcome, fewer studies interrogate how it is intentionally produced through pedagogy, learning design, and educator–student relationships in everyday teaching contexts (Escandell & Chu, 2023). As a result, higher education teaching practice has lacked a cohesive evidence base on *how* belonging can be intentionally fostered in the classroom.

Recent theoretical developments have begun to offer integrative frameworks for understanding belonging as a dynamic psychological and social phenomenon. Allen et al. (2021) propose an integrative model comprising four interrelated components: competencies for belonging (the skills needed to form connections), opportunities to belong (access to people, spaces, and experiences that enable connection), motivations to belong (the internal drive to seek relationships), and perceptions of belonging (subjective interpretations of belonging experiences). Together, these components provide a coherent organising structure for systematically mapping educator practices within classroom contexts and are conceptualised as dynamically interacting over time to shape students' lived experiences of belonging across learning environments. While offering a comprehensive framework, Allen and colleagues note that its application requires continued empirical investigation and refinement within specific educational settings.

Recent reviews have substantially advanced understanding of how belonging is defined, measured, and linked to student outcomes in higher education (e.g., Allen et al., 2024; Van Kessel et al., 2025). However, none has systematically mapped classroom-level, educator-enacted practices against an empirically grounded framework or examined how educators can foster belonging through their everyday teaching—the most immediate and actionable way universities influence students' experiences. This review addresses that gap by applying and empirically refining Allen et al.'s (2021) integrative framework, which was proposed but not yet systematically tested against a large body of evidence, across 209 studies of classroom-based educator practice. In doing so, we identify which framework components are, and are not, represented in educator-focused research and develop practice-specific subcategories that make the framework directly applicable to university teaching.

Purpose of the review

In response to these gaps, this scoping review sought to synthesise existing evidence on **how educators foster a sense of belonging among undergraduate students within higher education classrooms**. Guided by Allen et al.'s socio-ecological framework of belonging (2018), which highlights the microsystem (the immediate environment in which students interact with educators as a key context for fostering student belonging), this review systematically mapped the extent and nature of existing literature examining educator led practices and educator

characteristics that influence undergraduate students' sense of belonging. By focusing on elements enacted within the microsystem, this review aimed to identify practices that are directly actionable within everyday teaching and learning environments.

Method

A scoping review was selected to address our research question on how educators foster belonging among undergraduate students in higher education classrooms; this decision was made based on the conceptual diversity of belonging in the literature (Allen et al., 2021) and the absence of a standardised approach to its measurement across manuscripts. This review was intentionally practice-oriented, aiming to distil findings into actionable insights for educators and to map the range and nature of existing evidence on classroom practices associated with belonging. The protocol for this scoping review followed the methodological framework set out by Arksey & O'Malley (2005) as well as the PRISMA extension for scoping reviews (PRISMA-ScR) (Tricco et al., 2018). As this study involved the review of publicly available literature, ethical approval was not required.

Information Sources and Search Strategy

A comprehensive search to identify key literature was developed with assistance from an academic librarian. The search was structured around three concepts: *(1) students' sense of belonging*, (2) *the tertiary/higher education setting and (3) the role of the teaching academic.* Appropriate search terms were chosen to reflect these three concepts across four electronic databases (InformIT, ERIC (via Proquest), Web of Science, and PsychINFO electronic) (Table 1). The strategy for search term 1 was intentionally restricted to the terms belonging, relatedness, and connect* to align with the review's focus on the subjective psychological construct of belonging (Baumeister & Leary, 1995; Goodenow, 1993). Broader terms such as community, integration, inclusion, and engagement were excluded because, although related, they describe different concepts and may have introduced studies beyond the specific focus of this review. Restricting the search to construct-specific terminology reduced conceptual overlap and is consistent with recent belonging-focused systematic reviews (Allen et al., 2024; Van Kessel et al., 2025).

Google Scholar was searched using title-only keyword searches to capture potentially relevant grey literature. Results of all searches were imported into Covidence for screening and removal of duplicates. We intentionally opened the search to both peer-reviewed publications (including review articles and commentaries) and grey literature to ensure the inclusion of all relevant sources.

Table 1

Key Search Terms and Their Alternatives

Key search term	Related words or terms
Search term 1: Sense of Belonging	"Sense of belonging" Student* NEAR/3 belonging **OR** Student* ADJ3 belonging Student* NEAR/3 relatedness **OR** Student* ADJ3 relatedness Student* NEAR/3 connect* **OR** Student* ADJ3 connect*
Search term 2: Higher Education	Universit* Undergrad* "Higher educat*" College* "Further educat*" "Continuing education*" Post$school* "Post$secondary school"
Search term 3: Teaching academic	Academic* Educator* Lecturer* "Teaching Associate*" Tutor* Facilitator* Professor* Demonstrator* Faculty Instructor*

Note: Table 1 presents the master conceptual search terms and illustrative syntax. During the execution of the searches, search strings were systematically translated to match the specific syntax requirements of each database. Specifically:

1. **Web of Science and ERIC (ProQuest)** utilized the NEAR/3 proximity operator and * wildcard.
2. **PsycINFO (Ovid)** utilized the adjacent operator ADJ3, and the $ wildcard character (e.g., Post$school*).
3. **InformIT** adjusted phrases to exclude wildcard operators where database rules restricted their joint use with proximity searching.
4. **Google Scholar** searches utilized simplified natural language equivalents, relying on its automatic stemming and omitting proximity operators.

Eligibility Criteria

This scoping review includes peer-reviewed primary research articles, empirical reviews, book chapters, commentaries and grey literature (e.g. dissertations), across all languages, countries and publication dates. The final search was carried out in January 2025.

For inclusion, articles were required to meet the criteria outlined in Table 2. These criteria were designed to support our aim of identifying practical strategies that university educators can apply in their own classrooms. This focus was informed by Allen et al.'s (2018) socio-ecological framework of school belonging, which highlights the microsystem - the immediate environment

where students interact with educators - as a key context for fostering belonging. By centring on educator-led practices within the microsystem, the review sought to identify strategies that are directly actionable in university teaching and learning environments.

Table 2

Inclusion and Exclusion Criteria

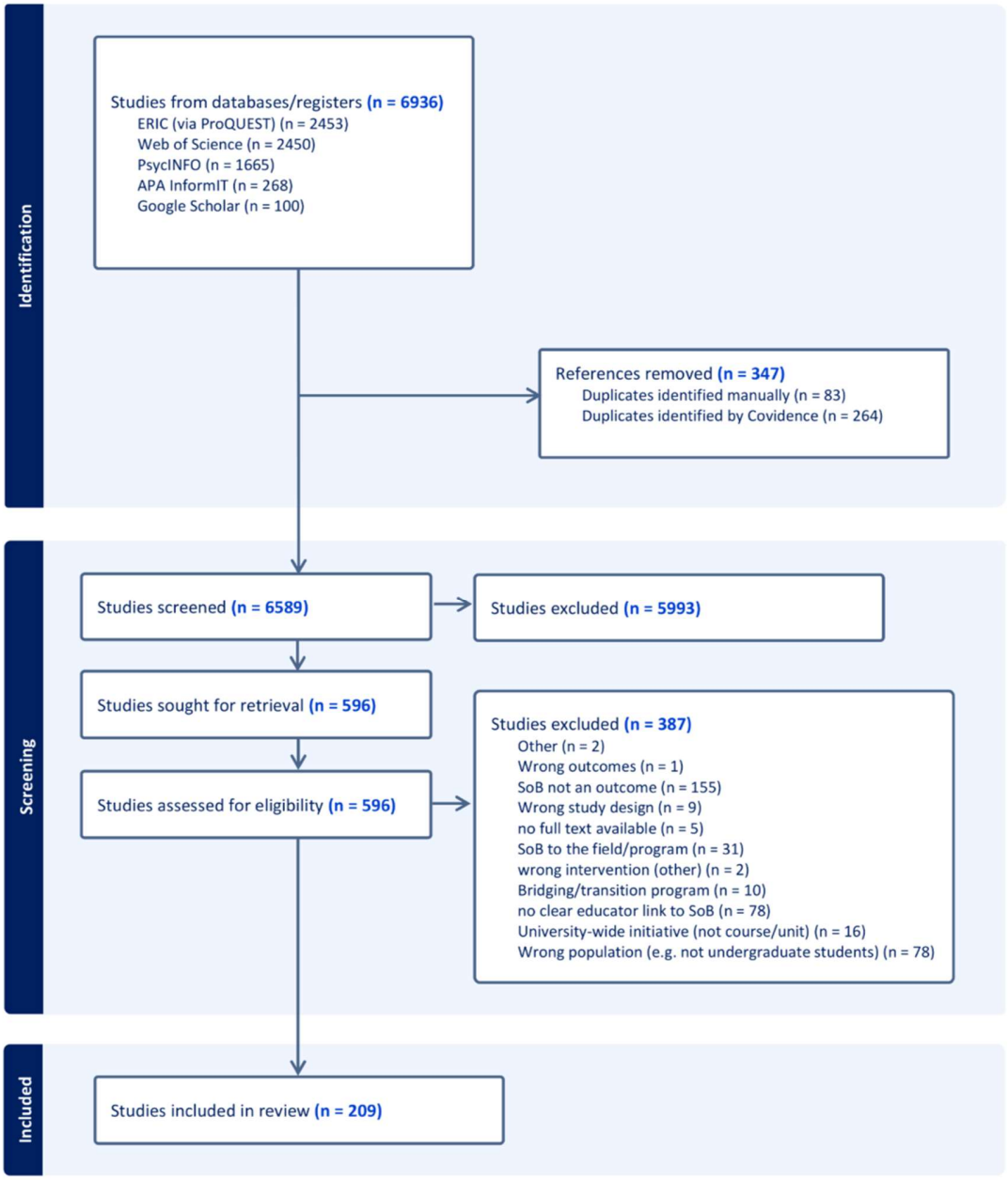
Criteria	Inclusion	Exclusion
Population	The population studied consisted of undergraduate university/college students.	Studies focussed on transition, bridging or enabling programs were excluded, as were those on community college students or TAFE students.
Fixed terms	The article abstract or title MUST have contained the word/s "belonging OR connect* OR relate*" (where the asterisk indicates truncation for word variants).	
Outcomes focus	The study explicitly examined student's sense of belonging as a primary or secondary outcome.	Studies were excluded if belonging was used only as a baseline measure, without being analysed as an outcome shaped by teaching practices or learning environments.
Educator profile	The intervention or context specifically involved classroom educators	The intervention or initiative was entirely student-run, (including those run by clubs/societies) or involved non-teaching support staff or research supervisors
Classroom focussed	The intervention or approach was carried out in individual classrooms (physical or virtual)	The intervention or approach described was a university-wide initiative, such as an institutional transition program or general social events.

Screening and Selection of Articles

The initial database searches captured a total of 6936 records which were imported into Covidence for screening. After removing 347 duplicate records, 6589 records were initially screened to determine if they met the inclusion criteria based on title and abstract. Of these, 596 full text articles were then assessed for eligibility against inclusion/exclusion criteria. Title and abstract screening, as well as full text review, was conducted by two reviewers. Any conflicts were resolved through discussion with a third reviewer to ensure consistency. After screening was complete, 209 articles met the inclusion criteria and were included in the final review (Figure 1).

Figure 1

PRISMA Flowchart



Data Extraction

A data extraction table was developed and piloted by the review team to extract relevant information from each included study.

The following data items were extracted from each article: author(s), year of publication, title, publication type, country, student year level and demographics, educational context/discipline; study aims/research question; study design, data collection methods, intervention or approach described, role of the educator, and how students' sense of belonging was conceptualised and

measured. Basic data (e.g. title, author, year of publication, research question, data collection methods) were extracted using a generative artificial intelligence (GenAI) tool to improve efficiency and reduce time burden on the review team, while remaining data was manually extracted by a single reviewer. All extracted data were subsequently verified and corrected as necessary by the reviewer.

In accordance with the PRISMA-ScR guidelines (Tricco et al., 2018), no critical appraisal of individual sources was conducted, as the primary aim of this review was to map the existing literature rather than assess study quality.

Synthesis of Results

A descriptive synthesis was undertaken to summarise the characteristics of the 209 included studies. This synthesis focused on: (1) the types of educator behaviours or characteristics, pedagogical practices, or classroom strategies described as fostering or undermining student belonging; (2) the alignment of study findings with one or more components of belonging; and (3) patterns and gaps in how belonging is addressed within classroom teaching contexts.

We conducted a framework synthesis using a deductive coding approach. Study findings were coded against the prior categories of Allen et al.'s (2021) integrative framework of belonging, which conceptualises belonging as comprising four interrelated components: (1) competencies for belonging (skills and abilities); (2) opportunities to belong (enablers and reduction of barriers); (3) motivations to belong (inner drive); and (4) perceptions of belonging (cognitions, attributions, and feedback mechanisms).

As coding progressed, it became evident that several findings extended beyond the specificity of the predefined components. To capture this additional nuance, we undertook inductive coding to develop sub-categories within each component. For example, within the 'opportunities' component, studies were further differentiated according to whether practices enhanced connections with peers, educators, physical or virtual spaces, or learning processes. Sub-categories were generated through repeated engagement with the data, followed by collaborative discussion and iterative refinement to ensure clarity and consistency. These inductively developed sub-categories were subsequently nested within the overarching framework components to support a structured and comprehensive interpretation of the literature.

Sentiment Analysis

To complement the narrative and framework synthesis, a sentiment analysis using a directional-coding (quantitizing) approach was undertaken to assess the reported association between educator practices and students' sense of belonging across a heterogeneous evidence base where meta-analysis was not appropriate. Each coded educator practice was assigned a sentiment score of +1 if it was associated with increased belonging, 0 if no effect was reported, and −1 if it was associated with decreased belonging. Scores were then aggregated within the overarching categories and subcategories. To account for both the direction and prevalence of findings, weighted sentiment scores were calculated by multiplying the mean sentiment score by

the frequency of codes. This approach, consistent with established evidence synthesis methods such as vote counting and quantitizing, enabled us to identify which educator practices were most consistently associated with positive or negative belonging outcomes, providing insight beyond that offered by frequency counts or narrative synthesis alone.

Reflexivity statement

As a group of teaching academics, our interest in this review is grounded in a professional and personal commitment to understanding how our own practices, behaviours, and attitudes shape students' sense of belonging. This positionality has directly influenced the focus of our study. Rather than examining university-wide initiatives, we have chosen to concentrate on the actions and strategies of educators within the classroom. Our goal is to explore what academics can do, in practice, to foster inclusive and supportive learning environments, with the intention of reflecting critically on, and ultimately improving, our own pedagogical approaches as well as those of others. We recognise that our perspectives may shape the interpretation of the literature we review, and we approach this work with an awareness of our dual role as both researchers and practitioners seeking to bridge evidence and classroom practice.

Results

A total of 209 publications were included in this scoping review. With the exception of one, all were published between 2000-2025, with more than half (52% n=108) published between 2021 and 2025. Of the 209, 156 described original research, 13 were review articles and 40 were dissertations (Table 3). Most publications (66%; n=137), were conducted in the USA, followed by Australia (n=16). Eleven reflected international collaboration across multiple locations, while Canada and the UK each contributed 8 publications. Smaller numbers of published works originated from other individual countries. Of the 209 papers, 30% (n=63) were conducted across a mix of disciplines, while 19% (n=40) were conducted within the natural and physical sciences disciplines and 12% of papers from the disciplines of society and culture. Other papers came from disciplines of engineering, health, education, information technology, management and commerce and creative arts disciplines. A full list of the 209 publications included in this review can be found in supplementary data table 1.

Participant characteristics

The vast majority of studies included in this review (72%; n=150), were conducted across multiple year levels of a tertiary course/program; while 20% (n=42) examined belonging in first-year students only (Table 3). The remaining papers looked specifically at belonging in a single year level other than first year. Forty-two percent (n=88) of papers examined belonging specifically in a disadvantaged group of students, such as those defined by race, gender or socioeconomic status. Of all the included papers, 17% (n=36) focussed on belonging in the context of race and ethnicity, 6% (n=13) in the context of gender, 4% (n=9) with regards to socioeconomic and first-generation status while almost 6% (n=12) examined intersections of disadvantaged groups or of students broadly defined as underrepresented. 13% (n=27) of papers were concerned with student sense of belonging in the context of different student experiences or pathways (e.g. student athletes and veterans, online students, and military students).

Table 3

Characteristics of Included Studies

Type of publication	Values, n (%)
Original research	156 (74.6%)
Review	13 (6.2%)
Dissertation	40 (19.1%)
Location (by country)	
United States	137 (65.6%)
Australia	16 (7.7%)
UK	8 (3.8%)
Canada	8 (3.8%)
Mixed/Multiple countries	11 (5.3%)
Others[#]	29 (13.9%)
Year of study of students	
1	42 (20.1%)
2	5 (2.4%)
3	3 (1.4%)
4	7 (3.4%)
5	1 (0.5%)
coursewide/combination	151 (72.2%)
Discipline Area	
Mixed field programs	63 (30.1%)
Natural & Physical Sciences	40 (19.4%)
Society & Culture	25 (12.0%)
Engineering and related technologies	18 (8.6%)
Health	18 (8.6%)
Education	13 (6.22%)
Information Technology	11 (5.3%)
Unspecified	10 (4.8%)

Type of publication	Values, n (%)
Management & Commerce	9 4.31%)
Creative Arts	2 (1%)
Participant Characteristics/demographics*	
Race and Ethnicity	35 (16.7%)
Gender	17 (8.1%)
Socioeconomic and First-Generation Status	18 (8.6%)
Disability and Neurodiversity	5 (2.4%)
Faith and Religious Identity	3 (1.4%)
Sexuality and Gender Identity	2 (1.0%)
International	6 (2.9%)
Indigenous	4 (1.9%)
English as an additional language	2 (1.0)
Student Experience / Pathways	10 (4.8%)
Broadly Defined Underrepresentation	6 (2.9%)
Other	5 (2.4%)
No specific demographic focus	133 (63.6%)

Note: Key attributes of the included studies were collated, including type of publication, location of study, year level of student participants, discipline area and participant characteristics/demographics. These characteristics provide context for interpreting findings and assessing the applicability of results across different educational environments.

[#]Other includes studies from the Netherlands (n = 4), South Africa (n = 4), Turkey (n = 3), Switzerland (n = 2), Hong Kong (n = 2), Greece (n = 2), and single studies from Saudi Arabia, Israel, China, Norway, India, New Zealand, Iran, Britain, and Vietnam, as well as three studies where the country was not specified.
* Percentages do not add up to 100% because of overlap among the included studies.

Framework Synthesis

To guide the analysis, we drew on Allen's Belonging Framework (2021), which comprises four interacting components: Opportunities to build belonging, Perceptions of an individual's belonging, Motivations to belong, and Competencies that allow belonging. As we progressed through data extraction, it became apparent that the studies included in this review primarily described opportunities created through educator practices and students' perceptions of those practices. Very few publications addressed students' Motivations to belong or Competencies to belong in ways that could be meaningfully analysed, and these domains typically reflected internal, student-driven factors beyond the scope of educator influence. For these reasons, and

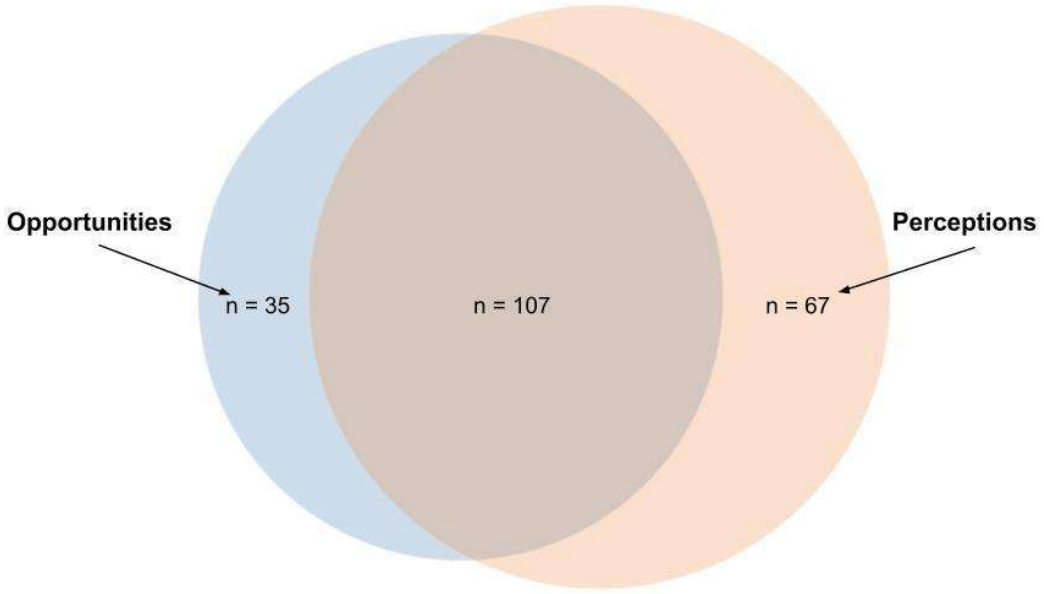
to ensure alignment between the framework and the available evidence, we adapted the model to focus on the two components most relevant to the included studies, each looking at classroom-based educator practice, with particular emphasis on Opportunities and Perceptions.

In applying the adapted framework, we also found that the breadth and diversity of the tertiary belonging literature required more specificity than the original model provided. Accordingly, we developed a set of analytic subcategories within both Opportunities and Perceptions to represent the nuances of educator practice (4 subcategories under Opportunities - social (connection with peers, connection with educator), structural (learning spaces, learning design); 3 subcategories under Perceptions - educator support, classroom climate, personal connection). These subcategories provided the nuance needed to capture the ways educators shape students' experiences of belonging within the learning environment.

A Venn diagram (Figure 2) of coding frequencies demonstrated considerable overlap between Opportunities and Perceptions, highlighting that the conditions educators create and the ways students experience those conditions are closely intertwined.

Figure 2

Mapping of Included Studies to the Adapted Belonging Framework.



Note: The area-proportional Venn diagram displays how studies aligned with the categories of Opportunities and Perceptions. Of the 209 studies, 35 (16.7%) mapped to Opportunities only, 67 (32.1%) to Perceptions only, and 107 (51.2%) to both. Overlapping studies represent instances in which educator-created opportunities and students' perceptions were described together. The figure was created using Bioinforx's Venn diagram tool. (BioInfoRx, 2025).

Opportunities: Conditions created for belonging

Across studies, educators created opportunities that supported belonging through two broad forms of practice: **social opportunities**, which focused on providing opportunities for connection,

and **structural opportunities**, which referred to the pedagogical and environmental design elements that make connection with others and the learning process possible. Four sub-categories were identified, with relative frequencies shown alongside the Perceptions subcategories in Figure 3.

Social Opportunities

Social opportunities refer to the intentional ways educators facilitate connection between students and between students and the educator. These opportunities help create the interpersonal conditions in which belonging can develop:

Connection with peers: Opportunities that support student–student interaction, such as collaborative activities or structured discussions, create conditions for meaningful peer connection.

Connection with the educator: Opportunities that support student–educator interaction, such as smaller class sizes and online communication tools, establish conditions for meaningful connection.

Structural Opportunities

Structural opportunities reflect the pedagogical and environmental design elements that shape students' capacity to engage meaningfully:

Learning spaces: Opportunities created through the design of learning spaces, such as physical or digital classrooms, and makerspaces, provide the settings that make interaction and participation possible.

Learning design: Opportunities embedded in the curriculum, such as clear unit organisation, active learning strategies, and scaffolded tasks, create a coherent and accessible pathway for students to engage with the course material and learning processes.

Perceptions: How belonging is experienced

Perceptions refer to how students interpret and experience the learning environment created by the educator, influencing whether they experience the opportunities provided as supportive of belonging. Three subcategories were identified, with educator support coded most frequently, followed by classroom climate, and then personal connection (Figure 3).

Educator Support: Educator support reflects students' perceptions of the educator's **professional support**, including their availability, responsiveness, and the extent to which they provide guidance that helps students navigate learning. This subcategory concerns instructional and academic support rather than interpersonal rapport.

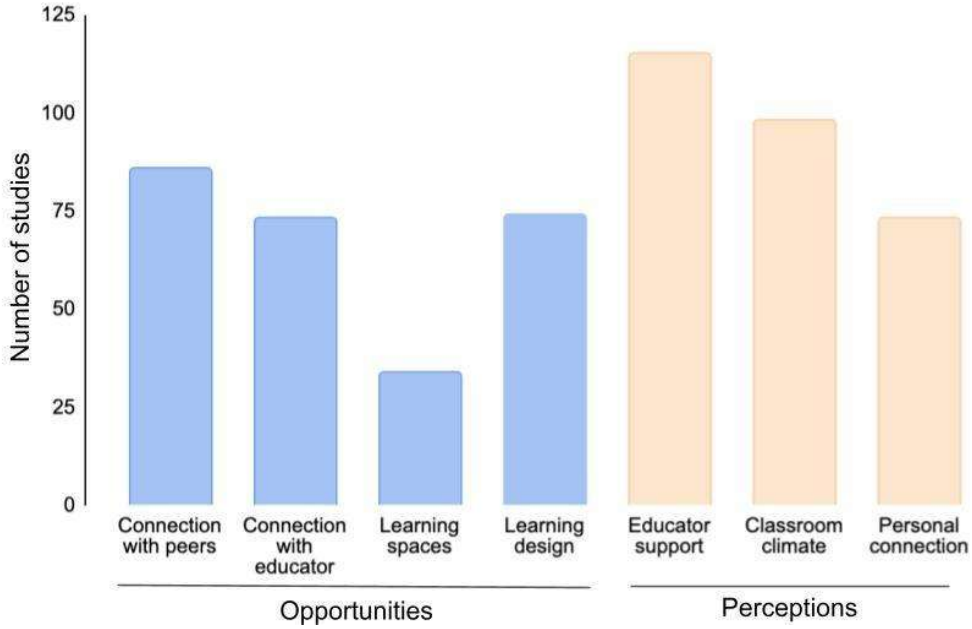
Classroom Climate: Classroom climate reflects students' perceptions of the overall tone and atmosphere of the learning environment shaped by the educator, including feelings of inclusion, positivity, and the degree to which the space feels welcoming.

Personal connection: Personal connection refers to students' perceptions of the educator's **interpersonal efforts** to build rapport. This includes relational qualities such as approachability, warmth, and genuine interest in students as individuals, such as using students' names or engaging in brief personal interactions. Unlike educator support, which relates to instructional or

academic guidance, personal connection reflects the relational, human dimension of students' experiences with the educator.

Figure 3

Frequency of Opportunities and Perceptions Subcategories Represented in the Included Studies.



Note: Bar chart showing how often each Opportunities and Perceptions subcategory was represented in the included studies, grouped by category. Within Opportunities, connection with peers appeared most frequently, followed by learning design, connection with the educator, and learning spaces. Within Perceptions, educator support appeared most frequently, followed by classroom climate and personal connection.

Sentiment analysis

Sentiment analysis was used to assess the overall influence of educator actions on students' sense of belonging. Sentiment scores reflect net effects, incorporating both positive and negative interventions and observations.

Opportunities

Educator actions that created opportunities for the students showed an overall positive influence on belonging, with an average sentiment score of 0.72 across all codes (Table 4). The strongest contributors were opportunities to connect with peers and those embedded in learning design (average sentiment = 0.81 for both), indicating that structured peer interaction and intentional design choices were particularly effective. Opportunities involving educator interactions with students also had a positive effect (average sentiment = 0.68), while those linked to learning spaces were least impactful (average sentiment = 0.42). Weighted sentiment scores highlighted the prominence of peer connections (74.00) and learning design (65.81), reflecting both frequency and strength of impact.

Perceptions

Educator-related factors shaping student perceptions also demonstrated a positive but variable effect on belonging, with an overall average sentiment of 0.68. Relationship building emerged as the strongest positive contributor (average sentiment = 0.78), underscoring the importance of interpersonal connections. Cognitive and emotional support showed a moderate positive effect (average sentiment = 0.69), while classroom environment had the lowest average sentiment (0.59), reflecting mixed influences: inclusive practices enhanced belonging, whereas negative experiences such as microaggressions reduced it. Weighted sentiment scores (86.00 for cognitive/emotional support, 65.59 for classroom environment), indicate these factors were frequently observed, but this includes both positive and negative practices. Thus, higher representation does not imply effectiveness; rather, it highlights areas where educator actions - intentional or unintentional - can significantly shape belonging.

Overall, sentiment analysis indicated that most studies were coded with positive sentiment, indicating positive or beneficial impacts on belonging. Negative sentiment was less common and typically associated with experiences of lack of support, exclusion, or unsupportive teaching practices.

Table 4

Sentiment Analysis of the Effect of Educator Practices on Student Sense of Belonging.

Opportunities			
Code	**Average Sentiment**	**Total Code Count**	**Total Weighted Sentiment**
Peers	0.81	91	74.00
Educators	0.68	81	54.68
Spaces	0.42	38	16.00
Learning Design	0.81	81	65.81
Overall sentiment (opportunities)			**0.72**
Perceptions			
Code	**Average Sentiment**	**Total Code Count**	**Total Weighted Sentiment**
Cognitive/emotional support	0.69	125	86.00
Classroom environment	0.59	111	65.59
Relationship building	0.78	75	58.56
Overall sentiment (perceptions)			**0.68**

Note: Each educator action was assigned a sentiment score to reflect its perceived impact on students' sense of belonging: +1 for a positive effect, -1 for a negative effect, and 0 for no effect. For each subcategory, the average sentiment score was calculated, along with the weighted sentiment (average score × number of responses).

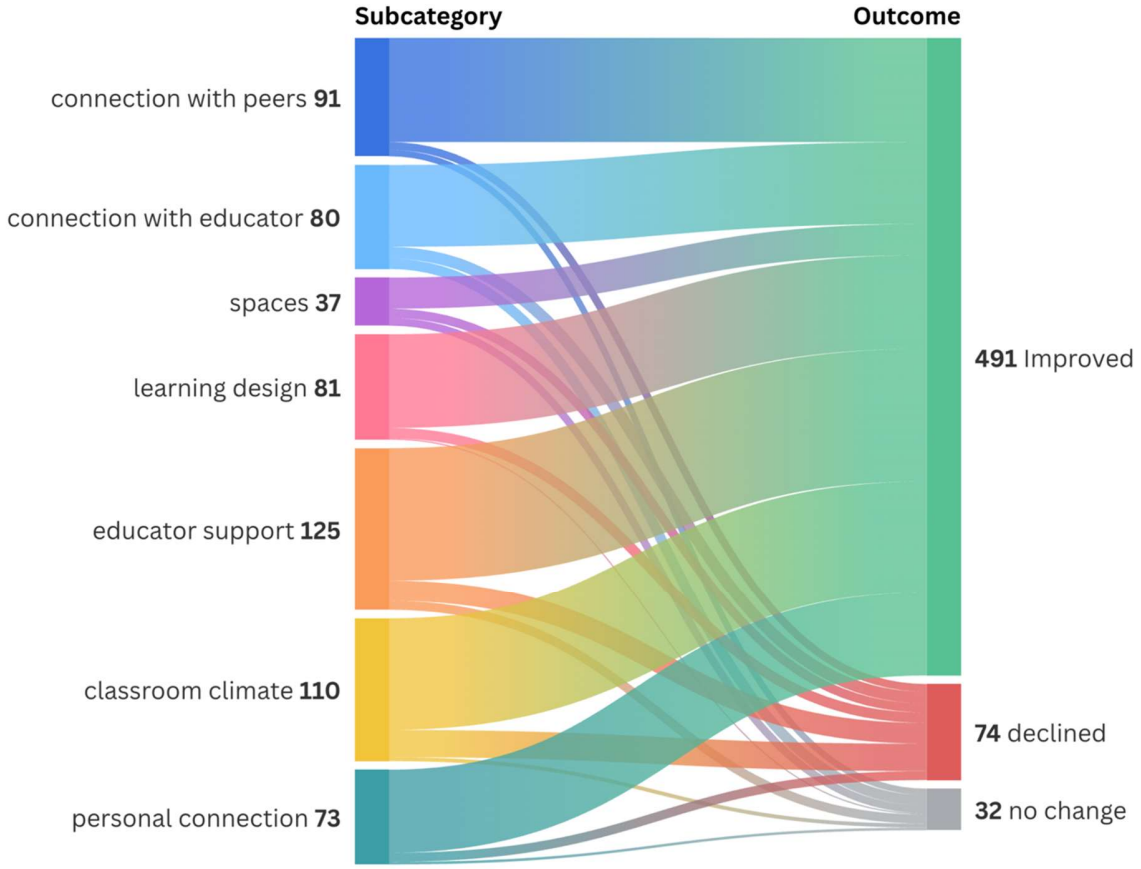
Belonging outcomes

Across the included studies, belonging outcomes varied, with most reporting positive effects. Of the 209 studies, 155 described improvements in students' sense of belonging, 9 reported declines, 14 found no change, and 31 reported mixed results.

The Sankey diagram (Figure 4) illustrates how these outcomes connected to the Opportunities and Perceptions subcategories. Each subcategory was mapped to the outcome reported in its respective study. Overall, most subcategories were associated with increased belonging, particularly *connection with peers*, *learning design*, *educator support*, and *classroom climate*. Smaller numbers of studies linked these same subcategories to decreased, or no change in belonging. This indicated that different aspects of educator practice and student perceptions - both positive and negative - were connected to varied belonging outcomes across the literature.

Figure 4

Sankey Diagram Linking Opportunity and Perception Sub-categories to Belonging Outcomes.



Note: Line thickness represents the number of studies connecting each subcategory to increased, decreased, or unchanged belonging outcomes. The diagram was generated using the Flourish data visualisation platform (Flourish, n.d.).

Factors that increase or decrease belonging

Across the included studies, we identified the specific educator practices within each of the Opportunities (Table 5) and Perceptions (Table 6) sub-categories that were found to increase or, when absent or poorly enacted, decrease, students' sense of belonging.

Opportunities: Students' sense of belonging is shaped by the structural environment — such as the differences between in-person and online learning spaces — alongside the structured social opportunities educators provide for peer-to-peer and educator–student interactions, with the absence or poor enactment of these conditions diminishing belonging (Table 5).

Perceptions: Belonging is driven by students' subjective experiences of the classroom climate and the educator's relational approach, specifically regarding perceived levels of support, inclusivity, and personal interest (Table 6).

Table 5

Opportunities Sub-categories Linked to Increased and Decreased Belonging.

Opportunity Subcategories	Factors that increase belonging	Factors that decrease belonging
Connection with peers	● Group work ● Communication tools (e.g. Discord) ● Small classes ● Informal interactions ● Class discussions ● Breakout rooms	● Group work that isolates students (e.g., being the only underrepresented student in a group)
Connection with educator	● Formal interactions ● Informal interactions ● Communication tools (e.g. Discord) ● Visible educator presence ● Small classes ● Additional teaching support (e.g. learning advisors) ● Consistency of educator across the semester	● Large classes ● Limited visibility or availability of the educator
Learning spaces	● Online ● In-person ● Field trips ● Maker-spaces	● Online
Learning design	● Active learning strategies ● Real-world connections ● Clear unit design ● Flexible deadlines ● Gamified learning activities ● Scaffolding ● Regular feedback ● Clear instructions ● Opportunities for student choice ● Synchronous learning ● Low-stakes assessment	● Asynchronous learning ● Insufficient scaffolding ● Limited or unclear instructions ● Lack of timely feedback ● Unclear unit design ● Predominantly didactic learning approaches

Table 6

Perceptions Sub-categories Linked to Increased and Decreased Belonging.

Subcategory	Factors that increase belonging	Factors that decrease belonging
Educator support	● Supportive ● Caring ● Available ● Checked understanding ● Personalised feedback ● Encouraged questions ● Encouraged students ● Recognised students' goals	● Limited availability ● Lack of care ● Disinterest in teaching ● Signalling busyness ● Incompetent ● Insufficient recognition of individual differences
Classroom climate	● Inclusive ● Positive ● Welcoming ● Humorous ● Non-judgemental ● Fair ● Enthusiastic	● Exclusive ● Offensive ● Negative tone
Personal connection	● Showed interest in students ● Approachable ● Used students' names ● Friendly ● Shared appropriate personal experiences ● Built personal connections ● Checked in with students (e.g., "How are you?") ● Contacted students when absent ● Demonstrated kindness	● Unapproachable ● Limited personal connection ● Lack of interest in students

Discussion

Student sense of belonging is associated with improved academic achievement, engagement and wellbeing (Van Kessel et al., 2025). This scoping review synthesised evidence from 209 studies exploring how educators can foster a sense of belonging in higher education classrooms. In alignment with Allen et al. (2021), this scoping review reinforced that belonging is a multidimensional construct that tertiary educators can shape through the **opportunities** they intentionally develop in the classroom, as well as the **perceptions** through which students subjectively experience them. Across the literature, this dynamic reflected how structured opportunities that educators provide for connection intersect with the relational and affective qualities of the learning environment.

Adapting Allen's belonging framework

To guide our analysis, we drew on Allen's (2021) integrative framework which conceptualises belonging across four dimensions: opportunities, perceptions, motivations, and competencies. While recognising that educators play an important role in supporting students' motivation and in developing the skills and competencies required to participate and connect, these dimensions were rarely operationalised as distinct constructs within the higher education classroom literature included in this review. Instead, educator practices associated with motivation and competence building were most often described indirectly and embedded within relational, instructional, or structural strategies that aligned more closely with the domains of opportunities and perceptions. Consistent with both the aims of this scoping review and the analytic patterns evident in the data, we therefore focused our synthesis on opportunities and perceptions as the dimensions most explicitly theorised, observed, and reported in relation to undergraduate classroom teaching practice. The sub-categories developed within these two domains provided a practical and pedagogically grounded lens that added specificity for synthesising how educator actions and learning environments shape students' experiences of belonging.

Opportunities: creating the conditions for belonging

This scoping review demonstrated that tertiary educators foster belonging through the opportunities they create for students to participate, connect, and navigate the learning environment. Social opportunities were most prominent in the literature, reflecting longstanding evidence that belonging develops through interaction and participation in academic communities (Tinto, 1997; Baumeister & Leary, 1995; Masika & Jones, 2016).

Social Opportunities

Group-based learning, communication platforms (e.g. Discord) and structured peer discussions were found to consistently support belonging (Liu et al., 2022; Cohen & Viola, 2022). These practices align with sociocultural theories that view learning as a relational process shaped through shared activity (Vygotsky, 1978). By offering 'low-stakes' interaction, such activities help students ease into the social and academic rhythms of university life, particularly benefitting first-year and underrepresented students who are more vulnerable to social isolation and for whom early connection with peers/educators has been shown to predict persistence, academic self-efficacy and overall university adjustment (Thomas et al., 2014; Kelly et al., 2025). Opportunities for more frequent educator-student interactions, such as smaller class sizes or additional teaching support, also contributed to belonging by strengthening the conditions in which meaningful engagement could occur (Phuong & Dung, 2024; Oldfield et al., 2019; Pienaar et al., 2022).

Structural Opportunities

Structural opportunities referred to the design features and learning environments that shape how students engage. Clear unit organisation (Kirby & Thomas, 2022), scaffolded tasks (Salvatore et al., 2024), and transparent expectations (Keppel et al., 2023) enable students to direct attention toward learning rather than deciphering course structure or assessment requirements. In line with

cognitive load theory, reducing extraneous cognitive burden supports deeper learning, motivation, and engagement (Sweller, 1988; Sweller et al., 2011). When students are not overwhelmed by confusing structures or unclear expectations, they are more able to participate confidently in learning activities and interactions, supporting both academic self-efficacy and relational engagement. Collectively, these mechanisms contribute to students feeling capable, supported, and secure within the learning environment, strengthening their sense of relatedness and belonging (Bandura, 1997; Kahu & Nelson, 2018).

This review found that learning spaces also mattered: in-person environments tended to facilitate spontaneous interaction (Brandl et al., 2017), while online settings produced both positive and negative belonging outcomes (Cheryan et al., 2011). These patterns suggests that modality itself is not the primary driver of belonging; rather, students' experiences hinge on the quality of design, interaction, and educator presence, a conclusion consistent with research identifying that social connectedness and teaching presence are core predictors of belonging and engagement in digital contexts (Peacock & Cowan, 2022). Across the studies reporting positive online belonging, educators adopted intentional relational and structural strategies such as using structured breakout rooms for low-stakes peer interaction (Johnson et al., 2024), arriving early to synchronous sessions to build informal rapport (Misra et al., 2023; Tang et al., 2023), maintaining high social presence through announcements and short videos (Higgs Kappel, 2023), and integrating interactive tasks that required participation (Thacker et al., 2022). These approaches align with evidence that well-designed interactional structures reduce isolation and foster a sense of community online (Martin & Bolliger, 2018). By contrast, online environments diminished belonging when students encountered limited interaction (Moran-Soto et al., 2022), unclear expectations (Higgs Kappel, 2023), feelings of isolation (Yang et al., 2022), or minimal instructor engagement (Lewis, 2019). This is an important point to consider in light of rising enrolments seen in the tertiary sector, and an increased offering of online learning since the COVID-19 pandemic (Stone, 2022).

Across the literature, our analysis revealed that belonging was both interpersonal and structural: social opportunities create the relational touchpoints for connection, while structural opportunities form the pedagogical architecture that enables those connections to occur.

Perceptions: how belonging is experienced

Aligned with Allen et al. (2021), studies that captured how students interpreted and experienced the learning environments shaped by educators was coded to the Perceptions category. These perceptions surrounded educator support, classroom climate and personal connection, and were found to frequently mediate the impact of opportunities.

Educator support was identified as the most frequently reported perception and carried a strong positive sentiment across studies. These findings indicate that professional support practices, such as educator accessibility (Oliveri, 2019; Plett et al., 2014; Reichenberger, 2020), responsiveness (Scaia, 2022; Huang, 2019) and personalised feedback (Langan, 2020; Lawson et al., 2018), appeared to function as key mechanisms for supporting students' psychological needs for competence and autonomy, which, alongside relatedness, are foundational needs

within self-determination theory that underpin students' motivation and engagement (Deci & Ryan, 2012). When educators are perceived as accessible and invested in student learning, instructional interactions help students build confidence in navigating academic demands while sustaining a sense of agency over their learning processes, reinforcing students' sense of connection to the learning environment and their experience of belonging (Freeman et al., 2007; Xerri et al., 2018).

Classroom climate further shaped how the opportunities created by educators were experienced. Perceptions of inclusive (Villanueva Alarcon et al., 2021; Goldwasser & Hubbard, 2019), welcoming (Meehan & Howells, 2019; Moore, 2022; Smith et al., 2023), and fair environments (Anderson, 2023), were consistently associated with strengthened belonging, aligning with research linking belonging to students' felt experiences of acceptance, respect, and social integration within learning communities (Goodenow, 1993; Strayhorn, 2012). Pedagogies of care illuminate this relationship by positioning relational safety as a foundational condition for academic and social engagement; when students perceive classrooms as supportive and non-judgemental, they are more willing to participate, collaborate, and seek help (Osterman, 2023). Our findings therefore suggest that classroom climate conditions the effectiveness of opportunity, with pedagogical efforts to foster belonging most effective in psychologically safe environments and less impactful in climates perceived as exclusionary or unsafe, regardless of structural intent.

Personal connection, while less frequently reported, revealed the strongest positive sentiment among perception codes, underscoring the powerful impact of small interpersonal practices. Behaviours such as using students' names (Lawson et al., 2018; Mahoney et al., 2022) , informal check-ins (Knapp et al., 2024), and expressing personal interest (Harris, 2021; Oliveri, 2019) contributed to students' feeling recognised and known. These relational micro-interactions operate as social signals of visibility and emotional affirmation, reinforcing interpersonal attachment (Baumeister & Leary, 1995) and supporting the need for relatedness central to motivation and engagement (Deci & Ryan, 2012). Consistent with research linking educator-student rapport to improved participation and learning outcomes in higher education (Frisby & Martin, 2010), such gestures appear to function as powerful 'belonging cues', enabling students to experience connection even within large or highly structured learning contexts.

Integrating opportunities and perceptions

Our data shows that belonging was most robustly supported when opportunities and perceptions aligned. Peer activities, for instance, were more effective when accompanied by inclusive climates and clear educator guidance (Bertacco, 2020; Riley, 2023; Wilton et al., 2019; Google et al., 2023; Kelly et al., 2024). Conversely, opportunities designed to support connection were less effective when the interpersonal environment signalled exclusion or disinterest (Alderson, 2018; Rainey et al., 2019). These findings affirm that belonging arises not from isolated strategies but from the cumulative and relational quality of the learning environment.

Population differences

The review also highlighted that belonging is not experienced uniformly across student populations. Underrepresented students, including students from minority cultural or linguistic

backgrounds, first-generation students, LGBTQ+ students, and students from lower socioeconomic backgrounds, often reported more fragile belonging (Hernandez, 2023; Lawson et al., 2018; Donlan et al., 2023). Experiences of stereotyping, microaggressions, or limited representation in curriculum materials were particularly detrimental (Campbell-Montalvo et al., 2022; Garcia, 2021; Marandure et al., 2024), while inclusive pedagogical practices, such as culturally responsive learning design, opportunities for shared identity connection, and representation within course content were consistently described as supportive (Villanueva Alarcon et al., 2021; Benbow & Vivyan, 2016; Davi, 2021; Bertacco, 2020). Although these patterns were reported across studies, subgroup analyses were typically embedded within qualitative or descriptive findings rather than examined through systematic comparative designs, limiting the ability to quantify differential effects. Together, these findings suggest that fostering belonging requires attentiveness to structural inequities and the differential ways students may interpret and experience ostensibly similar teaching practices.

Limitations

A key limitation of this scoping review relates to the considerable variation in how belonging was defined, conceptualised, and measured across studies. Approaches ranged from situation-specific survey tools (such as Walton's measures) to broader instruments like the UCLA Loneliness Scale, alongside thematic analyses and qualitative reflections drawn from focus groups or open-ended survey responses. Because these tools capture different aspects of belonging, the lack of conceptual and methodological consistency limits the comparability of findings and complicates interpretation across the evidence base.

In addition, the existing literature is predominantly situated within Western, English-speaking higher education systems. Although several studies included underrepresented student groups such as students from minority cultural or linguistic backgrounds, first-generation students, LGBTQ+ students, and students from lower socioeconomic backgrounds, these perspectives were less common. Furthermore, this review did not stratify findings by participant characteristics because demographic information was inconsistently reported and labeled across the included studies. Continued research that more deliberately incorporates a broader range of cultural and intersecting identities will strengthen the field's capacity to understand how belonging is fostered across varied educational environments.

Although our sentiment analysis indicated that most studies reported positive or beneficial impacts on belonging, this pattern should be interpreted with caution. The predominance of positive sentiment may reflect publication bias, whereby studies describing neutral or negative outcomes, such as lack of support, exclusion, or unsupportive teaching practices, are less likely to be published or reported in detail. Consequently, the distribution of sentiment in our findings may overrepresent positive outcomes of belonging interventions or practices.

Implications for practice

In contrast to the school-focused implementation guidance provided by Allen et al. (2021), which emphasises whole-school systems, family engagement, and pastoral structures, the strategies

summarised in Table 7 reflect classroom-level practices that emerged across the higher-education literature included in this review. These practices represent educator-focused approaches that are feasible within university teaching contexts and were commonly described as shaping students' experiences of belonging. As this scoping review did not undertake critical appraisal or determine the relative effectiveness of individual strategies, the table should be interpreted as a synthesis of practice-informed examples reported across studies, rather than prescriptive recommendations for implementation. Importantly, these practices are applicable across disciplines and align with Universal Design for Learning principles (Rose & Meyer, 2002).

It is however important to recognise that not all university educators primarily identify as teachers; many are researchers who teach as part of contractual obligations (Patfield et al., 2023). Consequently, their understanding of concepts such as "educator support" and the role of an educator ('sage on the stage' vs 'guide on the side'), may be shaped by more traditional views or their own experiences of tertiary education, and potentially differ from that of education focussed academics who have chosen teaching as their core profession. These variations in perspective may influence how support practices are enacted and therefore perceived by students - which may in turn, impact students' sense of belonging. For practice, this highlights the need for professional development and institutional strategies that help all educators - regardless of their primary identity as researchers or educators - understand the role of relational support in fostering student sense of belonging and consequently, student success.

Table 7

Implications for Practice: Strategies to Foster Student Belonging

Design principle	Pedagogical focus	Practical strategies
Intentional social design (Opportunities for peer connection)	Create structured opportunities for peer interaction	● Group work ● Communication tools ● Opportunities for informal, low-stakes peer interaction
Relational teaching practice (Educator support)	Support student autonomy and competence through academic care	● Educator availability ● Personalised feedback ● Guidance tailored to individual learning needs
Pedagogies of care and psychological safety (Classroom climate)	Establish safe, respectful learning environments	● Non-judgemental communication ● Positive tone ● Encouraging questions ● Inclusive class norms
Interpersonal connection (Personal connection)	Build rapport and personal recognition	● Learning students' names ● Informal check-ins ● Demonstrating interest in students as individuals
Inclusive and transparent teaching practice (Learning design)	Reduce barriers and clarify learning expectations	● Scaffolded tasks ● Clear expectations ● Flexible pathways ● Relevant examples ● Diverse curriculum representation
Intentional design for online connection (Learning spaces)	Sustain connection in digital contexts	● Breakout rooms ● Interactive activities ● Consistent educator presence ● Clear online navigation

Future work

Allen's framework identifies four pillars that contribute to a sense of belonging in K–12 students. However, our scoping review shows that tertiary studies focus primarily on the opportunities educators create or on students' perceptions of belonging in response to particular teaching innovations. Notably, none explicitly examined how educators might develop students' *competence* or *motivation* to belong. This gap suggests an important opportunity for higher education to design targeted interventions - through instruction, activities, experiences, or environmental adjustments - that actively cultivate these dimensions. For example, competencies essential to belonging, such as the ability to relate to others, communicate effectively, and engage respectfully across cultures, can be strengthened through explicit instruction, guided practice, and reflective activities. Similarly, although Allen emphasises that motivation to belong is shaped by the basic psychological needs of relatedness, competence, and autonomy (Deci & Ryan, 2001),

tertiary studies did not investigate how common teaching practices (such as collaborative learning, peer-assisted learning, or efforts to build psychologically safe and inclusive environments) might support these motivational processes.

This gap becomes even more apparent when considering that Walton and Cohen's (2011) social-belonging exercise, one of the few interventions designed to increase students' motivation to belong, was implemented outside regular classroom teaching. Its success highlights the lack of comparable educator-led approaches embedded within everyday pedagogy. Given the well-established links between belonging and student engagement, persistence, achievement, and well-being, addressing this omission presents a critical avenue for enhancing student outcomes and advancing our understanding of belonging in tertiary contexts.

Conclusion

Belonging in higher education is shaped by the interaction between the opportunities educators create and the ways students perceive and experience those conditions. Because students' sense of belonging is strongly linked to engagement, wellbeing, and persistence in university (Strayhorn, 2012, Pedler et al., 2022), understanding how educators can foster belonging in the classroom is essential. Both social and structural pedagogical practices matter, and their impact is mediated by the relational and emotional dimensions of classroom life. Importantly, belonging can be fostered in both in-person and online settings when educators intentionally design for connection, clarity, and care. Strengthening belonging therefore requires deliberate, relational, and inclusive pedagogical approaches supported by institutional structures that enable educators to enact them.

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