Understanding the factors and consequences of student belonging in higher education: a critical literature review

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Abstract

Student belonging is becoming an increasingly prominent concept in how universities pursue policies and practices to ensure student success. Through this increased prevalence, there has been a substantial increase in research output on this topic in recent years. This critical literature review aims to provide a comprehensive and accessible synthesis of research around the factors that affect student belonging and how it links to student success. Utilising a systematised search and appraisal method, 118 studies were included and reviewed. The existing literature has robustly shown the connections between belonging and many different aspects of student success – including student engagement levels, wellbeing, and retention. Critical analysis of the studies shows that the factors affecting student belonging are also multiple, although only some – such as experiential pedagogies and personalised support from staff – have been replicated in studies across multiple contexts and with experimental research methods. Importantly, there are also factors which negatively impact students' sense of belonging – such as experiences of being stereotyped by staff. Utilising these findings around factors that influence student belonging, this article provides a set of recommendations for practitioners and identified gaps for future research on student belonging. Overall, this article contributes to understandings of how to impact students' sense of belonging and how this links to student success.

Keywords: student belonging; literature review; student success; student engagement; belonging; higher education.

Introduction

Belonging is a psychological construct that affects us all. We all have a need to belong (Baumeister and Leary, 1995). For those working in higher education (HE), student belonging has become an increasingly prominent concept in recent years – over 70% of studies included in this review were published in the last five years (Figure 2). Belonging has been discussed as a crucial component of student success for many years (Tinto, 1997). From improved academic performance (Veldman, Meeussen and van Laar, 2022), engagement (Zumbrunn et al., 2014), mental wellbeing (Kahu, Thomas and Heinrich, 2022), and retention rates (Gopalan, Linden-Carmichael and Lanza, 2022), student belonging is arguably central to them all. Despite these promising links to student success and substantial research, there is a notable absence of literature reviews that help to summarise how this concept can be understood and adapted into practice within universities. One recent review from Allen et al. (2024) explored the existing literature on student sense of belonging, providing many useful insights into the concept and its practical applications. However, due to the scope of this recent review, it only included studies from one journal, limiting the generalisability of its findings.

Given the increased prevalence of research around student belonging, a thorough understanding of existing work is crucial. Understanding what has already been investigated can help focus future research or practical evaluations on gaps within current knowledge. It is for this reason that this review compiles, critiques, and synthesises key literature around how student belonging has been linked to different aspects of student success and what factors have been shown to influence it.

This article aims to further understanding of student belonging through a focus on the following two research questions (RQs):

1. How is student belonging connected to <u>student success</u>?
2. <u>What factors</u> affect students' sense of belonging?

This review has taken a global approach, including research across many countries' HE systems. Findings around RQ1 show that studies have identified 16 different aspects of student success that have been linked to student belonging; including student engagement, retention, mental wellbeing, and academic performance. Findings for RQ2

emphasise the many, multiple factors that have been associated as being connected to student belonging. There are, however, only some factors that have now been shown to have significant, predictive influence on student belonging in multiple contexts; including personalised support from staff, use of experiential and group pedagogies, and proactively discussing potential barriers to belonging with students. In its conclusions, the article summarises what is known on the topic of student belonging. It also includes recommendations for practice and policy to improve students' sense of belonging, as well as recommendations for future research and evaluation, based on existing gaps.

Review methodology

Utilising scoping review principles to develop research questions

Prior to beginning this critical literature review on student belonging, a non-exhaustive and unsystematic search of the student belonging literature was conducted. The purpose of this approach was to better understand the scope and focus of existing literature around student belonging, which is like the purpose of a scoping review (Grant and Booth, 2009). However, scoping reviews are more commonly systematic, so that they are replicable, whereas this initial search was unstructured. 106 papers were reviewed, focusing on the research questions each study was attempting to answer, until theoretical saturation had been reached (Saunders et al., 2018). No appraisal of study quality was conducted at this stage. The purpose of this stage was to assess the scope of existing literature and develop research questions to be addressed in the subsequent critical review.

Five common areas of focus in student belonging research were identified through this initial search of the literature:

1. How is student belonging defined and measured?
2. How is student belonging connected to student success?
3. What factors affect students' sense of belonging?
4. How is belonging experienced in different ways by different students?
5. How has research evaluated efforts to improve student belonging?

These research questions (RQs) represent the most frequent questions being addressed within existing literature around student belonging: what it is, how to influence it, why

influencing it can be beneficial for students, how it is experienced by different students, and how universities have attempted to influence it. To have attempted to review literature against all five of these research questions in a single review would have likely been detrimental to the depth of critical analysis of included studies. Therefore, it was decided that this article should focus solely on the research questions around how belonging has been linked to student success and what factors have influenced it – points two and three in the above list.

Systematised critical literature review approach

A systematised, unpublished protocol was then utilised to search studies and make inclusion and exclusion decisions against relevancy to the two selected research questions. This was chosen to provide a transparent and replicable approach for finding literature, which can often be lacking in critical literature reviews (Grant and Booth, 2009). This hybrid approach was selected to mitigate common criticisms of the unstructured search and appraisal aspects of critical reviews (Samnani et al., 2017). Systematised reviews may include some aspects of a systematic review, but may be lacking in others (Grant and Booth, 2009). In the case of this review, the absence of multiple reviewers during screening, as well as the use of Google Scholar as a secondary source of studies, mean that this review should be considered systematised, rather than systematic.

To critically appraise the methodological quality of studies, an 'absence of threats-to-validity' approach was utilised; assessing truthfulness, applicability, consistency, and neutrality as measures of trustworthiness (Wells and Littell, 2009). This approach was taken instead of attempting to rank studies based on their designs, as this is often problematic in reviews that contain both qualitative and quantitative methods (Hong and Pluye, 2019). Reporting quality has also been assessed, given its inherent links to assessing methodological quality (Carroll, Booth and Lloyd-Jones, 2012). A thematic analysis approach was selected to help in classification of themes, as it allows clear identification of commonality within existing literature, which is necessary for the development of models and hypotheses expected within a critical review (Barnett-Page and Thomas, 2009). In this review, a codebook was not developed based on the line-by-line contributions of each study (Thomas and Harden, 2008). Instead, quotes were lifted from each study on key points that related to either of the two RQs. For instance, any findings in a qualitative study that related to factors affecting students' sense of belonging,

were stored as potential contributions to RQ2. Following this, a stage of generating analytical themes (Thomas and Harden, 2008) was conducted, where factors or student success outcomes were logged against each study (Appendix 3 and 5). Critical notes, made against each study using the 'absence of threats to validity' approach discussed above, were considered at this stage to ensure that analytical themes were being appropriately categorised. For instance, whether a study's methodology could claim to really show a predictive relationship between belonging and a certain student success outcome. This is discussed further in the results for each RQ.

Following the standard approach for a critical literature review, this review does not attempt to refer individually to all studies included. Instead, thematic findings across the available literature are discussed against the two RQs. Cited studies are included within the Appendices, whilst all included studies are present in Appendix 2. For each RQ, a summary of the nature of studies is presented, along with critiques of inconsistencies and conflicts within the existing literature. Where possible, models have been produced to visually summarise the findings.

Search strategy and inclusion/exclusion criteria

The initial scoping exercise for the purpose of developing research questions and a subsequent systematised research protocol took place from September 2021 to March 2022. Google Scholar searches were conducted on the term 'student belonging' with 106 articles being reviewed before theoretical saturation was reached (Saunders et al., 2018).

The subsequent searches for the systematised, critical review were conducted in January 2023 through the British Educational Index (EBSCO) database, as well as the search engine Google Scholar. The British Educational Index (EBSCO) database was selected due to its comprehensive coverage of journals related to higher education. Whilst Google Scholar was selected as a secondary search tool to ensure that grey material – such as sector reports and practitioner-focused studies – could be considered. Exact timings and terms used can be found in Appendix 1.

After removal of duplicates, a title review stage and an abstract review stage were carried out to analyse the relevance of the studies against the identified research questions. Studies were excluded if they were not peer reviewed, if full-text could not be accessed

(such as purchase-only literature) or if they were not available in English. Studies were also excluded if they did not include primary research methods with students – such as focus groups, interviews, or surveys. This approach was taken to ensure that critical analyses could be conducted in a consistent manner, so that the visual representations developed as part of this review to depict existing research findings are focused on contributions from students about their experiences of belonging.

Whilst a defined protocol in search and appraisal of studies has been utilised, there is an increased risk of bias in searching, screening, and data selection when these stages are carried out by a single author (Uttley and Montgomery, 2017). This is why the search and appraisal of studies should be considered systematised, rather than systematic. Another limitation is that whilst the review was global in its approach, the exclusion of studies not available in English limits this.
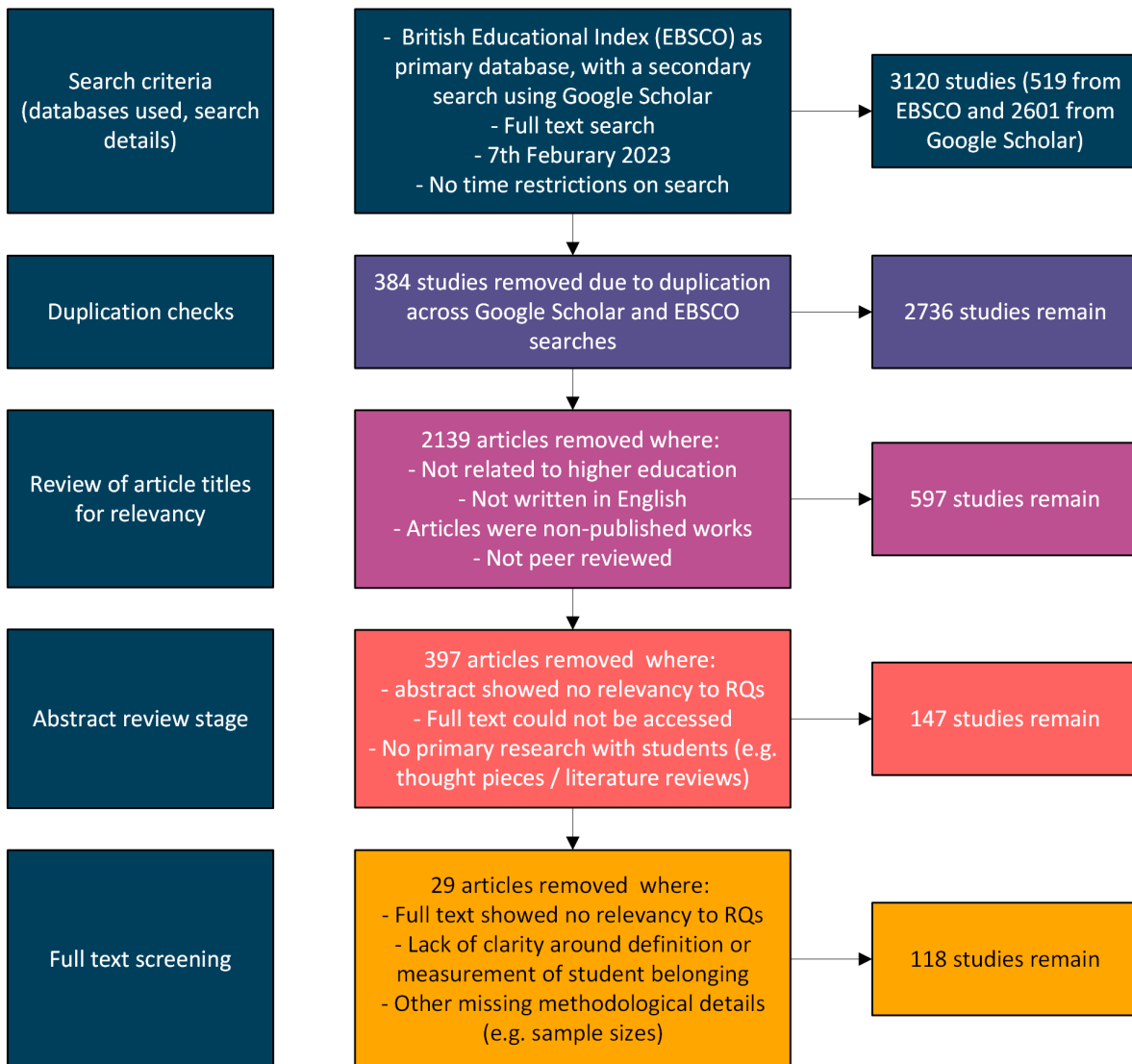
Results

Initial searches found over 3000 studies. This was reduced to 597 once removing duplicates, non-peer-reviewed journal articles, non-English studies and a review of relevancy based on article titles. This was further reduced to 147 once abstract reviews against the research questions had been conducted and then 118 once full-text reviews had been carried out. Whilst it is typical to usually combine article title and abstract screening into one stage, this was separated into two stages for this review to reduce workload. In particular it was found through early title screenings that a large number of studies were not related to higher education, despite its inclusion in the search criteria.

Full text screening was then carried out, appraising study quality against each RQ. More context about how relevancy against each RQ was assessed has been included within the respective results section for each RQ. An 'absence of threats-to-validity' approach was utilised to assess methodological quality of studies during the full-text review, which found a few emerging themes as issues of trustworthiness within the existing literature. Studies were still included within the review as long as they contributed to either of the RQs. Studies were also excluded at this stage if they lacked clarity around how belonging was defined or measured, or if other key methodological details – such as sample sizes – were

missing. Full details of the search, inclusion and exclusion stages are represented in Figure 1, with a full list of studies included in Appendix 2.

Figure 1. Search protocol with inclusion and exclusion criteria.

Stages of search, with inclusion and exclusion criteria

Search criteria (databases used, search details)	- British Educational Index (EBSCO) as primary database, with a secondary search using Google Scholar - Full text search - 7th Feburary 2023 - No time restrictions on search	3120 studies (519 from EBSCO and 2601 from Google Scholar)
Duplication checks	384 studies removed due to duplication across Google Scholar and EBSCO searches	2736 studies remain
Review of article titles for relevancy	2139 articles removed where: - Not related to higher education - Not written in English - Articles were non-published works - Not peer reviewed	597 studies remain
Abstract review stage	397 articles removed where: - abstract showed no relevancy to RQs - Full text could not be accessed - No primary research with students (e.g. thought pieces / literature reviews)	147 studies remain
Full text screening	29 articles removed where: - Full text showed no relevancy to RQs - Lack of clarity around definition or measurement of student belonging - Other missing methodological details (e.g. sample sizes)	118 studies remain

Over 70% of included research around student belonging has been carried out in the last five years (Figure 2). This is to be expected, given the close relationship between student belonging and student engagement (Strayhorn, 2022), which has also rapidly increased its research prominence in recent years (Tight, 2020). Furthermore, most of this research (56%) has been carried out within the United States (Figure 3). This presents a question around the generalisability of findings in other higher education systems, given the disproportionate weighting of US-based studies.

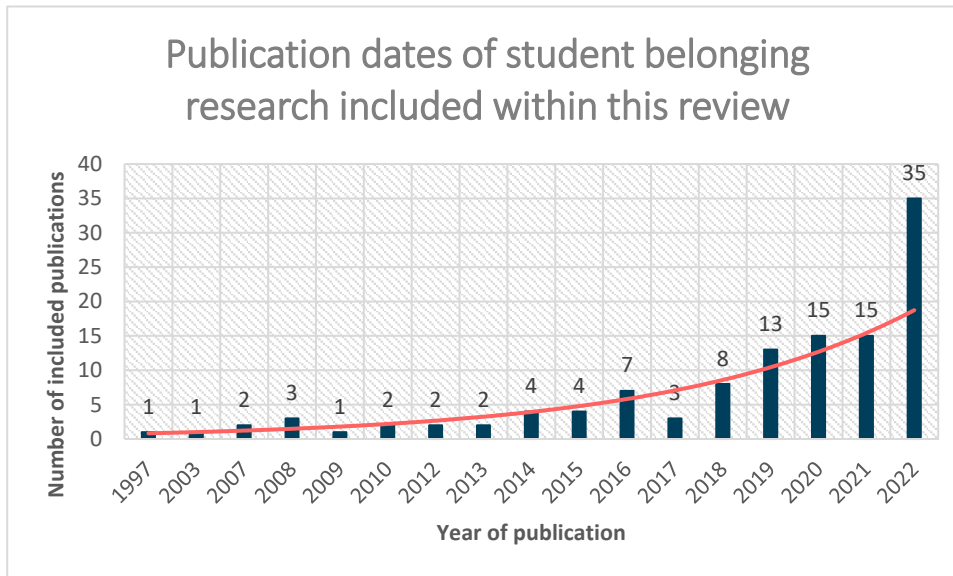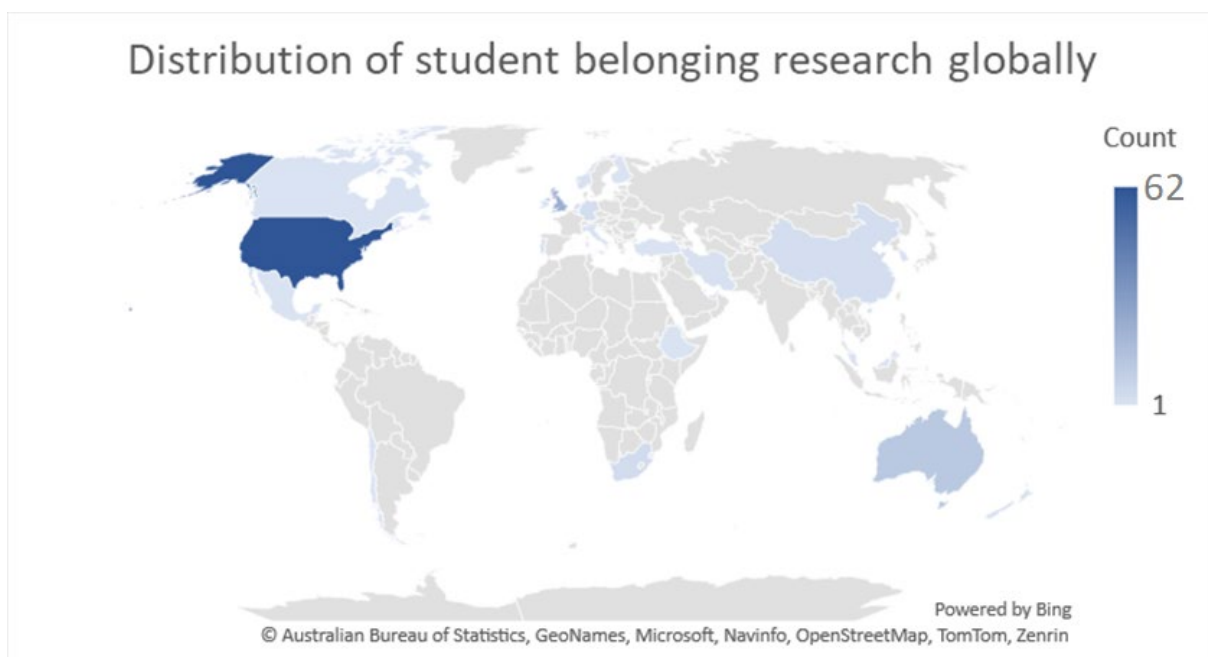**Figure 2. Publication dates of included student belonging research.**

Figure 3. Student belonging research visualised based on country where research took place.

RQ1: How is student belonging connected to student success?

Forty studies met the criteria for this research question by addressing how belonging connects to different measures of student success. This was achieved through a variety of qualitative and quantitative methodologies, and across all the included studies, 16 different student success outcomes were identified as having a connection with students' sense of

belonging (Appendix 3). The analysis focused on whether studies had identified a qualitative connection, significant connection, or even a significant predictive relationship between student belonging and the attribute of student success being explored.

Whilst some studies did focus on qualitative connections (Mulrooney and Kelly, 2020; Kahu, Thomas and Heinrich, 2022), all student success attributes were also assessed within at least one quantitative study where a significant relationship could be established. However, only some studies utilised methodologies that could address the directional relationship and therefore posit belonging as a predictive factor. The term 'predictive' has been utilised recognising that most methodological approaches in studies were not able to assess whether there was a causal relationship between belonging and the attribute of student success in question. However, use of randomised control trials (Murphy et al., 2020), quasi-experimental approaches (Caligiuri et al., 2020) and other experimental methodologies (Liu, Yang and Ho, 2022) were utilised across studies to show instances where changes in students' sense of belonging predicted subsequent changes in a measurable student success outcome.

This analysis cements the evidence that student belonging is a significant prerequisite of retention (Davis et al., 2019; Murphy et al., 2020; Fink, Frey and Solomon, 2020; Russell et al., 2022), both directly and in terms of improved intention to persist (Hausmann, Schofield and Woods, 2007), increased student engagement (Gillen-O'Neel, 2021), improved academic performance (Cwik and Singh, 2022; Sotardi, 2022), and positive mental health (Veldman, Meeussen and van Laar, 2023).

Some attributes of student success are also recognised within other studies (and discussed within the results of RQ2) as factors that contribute to student belonging – for example motivation and task value. This suggests that some relationships may be two-way directional, representing the possibility of virtuous or negative spiral effects. For instance, students who feel lower levels of belonging are significantly less likely to utilise help-seeking strategies (Won, Hensley and Wolters, 2019), which could then result in them feeling even lower levels of belonging if they are not able to find appropriate support (Holley, Kane and Volpe, 2014).

Many studies did not use methodological designs that allowed them to explore directionality of relationship. However, more recently some studies have begun to address

these gaps. For instance, through the use of direction dependence analysis, Slaten et al. (2024) were able to report a strong indication that belonging causes academic motivation, rather than the other way around. These connections between belonging and student success have been visualised in Figure 4. Some studies included within this review also evidenced connections between different aspects of student success – for example, links between academic misconduct intentions and academic performance. Such links between different aspects of student success have been added to Figure 4 as dotted line connections. These thematic connections were identified when analysing the existing literature against this research question, and introduced to emphasise the interconnectivity of student success outcomes and student belonging.

Figure 4 – Belonging and student success connections, visualised by significance of relationship and degree of replication.
Dotted lines are used to denote thematic connections between different student success outcomes to emphasise that these outcomes should not be seen in isolation.

Connections between belonging and student success, addressing existence of predictive relationships and degree of replication within literature
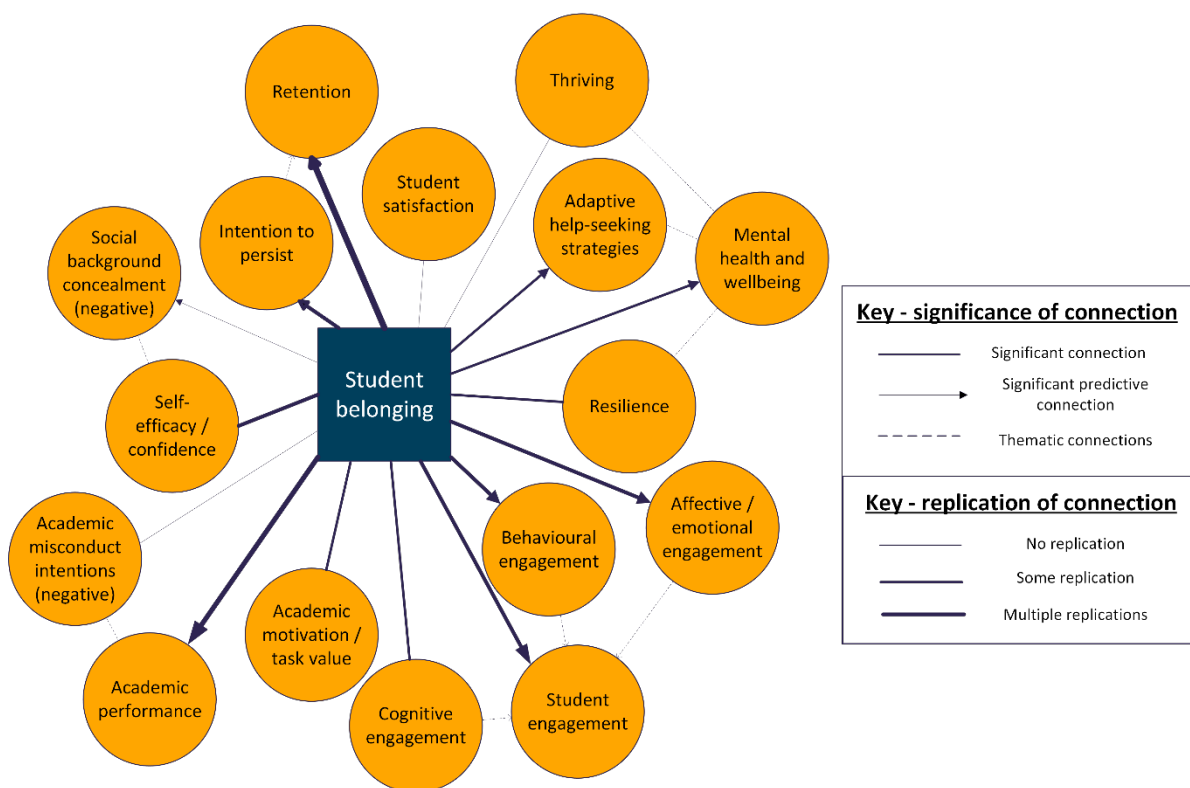
However, existing research has found that well-documented relationships between students' sense of belonging and associated student outcomes are not always replicated,

especially when looking at different demographics of students (Meeuwisse, Severiens and Born, 2010; Gopalan, Linden-Carmichael and Lanza, 2022). It is therefore important to consider the ways in which student belonging varies when explored through the experiences of different groups of students, and students at the intersections of multiple different groups (Rainey et al., 2018; Gilani, 2024). Furthermore, the methodologies used to assess the connection between student belonging and different student outcomes varies substantially across the literature. Within quantitative studies included within this review, there are 28 different named scales used to measure student belonging. A risk in student belonging research, given the wide variety of scales used, is that belonging is not being measured consistently, which hinders comparisons across existing literature. 27 studies used bespoke or unattributed scales, which could vary substantially in the elements of belonging that they are capturing.

In summary, existing research has shown how student belonging has a significant connection to many aspects of student success; from improved academic performance (Veldman, Meeussen and van Laar, 2023), engagement (Zumbrunn et al. 2014), mental wellbeing (Kahu, Thomas and Heinrich, 2022), and retention rates (Gopalan, Linden-Carmichael and Lanza, 2022). However, the wide variety in methodological approaches, including how belonging is conceptualised, defined, and measured, present challenges for how to compare across and build on this existing research.

RQ2: What factors affect students' sense of belonging?

90 studies met inclusion criteria for this research question by investigating one or more factors that might affect students' sense of belonging through a mixture of quantitative, qualitative, and mixed methodologies. Similar to studies assessed within the previous research question, the findings of many studies used terms such as 'predictor' or 'cause' relating to belonging factors when directional relationships had not been established. Many other studies recognised in their own limitations the lack of appropriate methods to measure causality. To address this, this analysis has separately categorised and visualised factors based on whether studies utilised methodologies that were able to show predictive relationships between these factors and changes in students' sense of belonging. Secondly, results of some quantitative studies could have been more explicit about factors that had been tested and found to have no significant connection with belonging (Schumm, 2021). Finally, as research on this topic becomes saturated, this

author perceived a more general risk that the themes chosen in results of qualitative studies may have been biased based on themes already identified in previous student belonging research – a bias of expertise.

In conducting this thematic analysis, varied factors affecting student belonging have been categorised against two dimensions: 1) degree of replication 2) nature of relationship (Figure 5). A full list of these factors and the research studies that explored them can be found in Appendix 4. Factors from some studies were not included in this appraisal if judged to be of questionable methodological quality using the 'absence of threats-to-validity' approach. Figure 5 displays 59 factors shown in existing research to influence student belonging, and thus contains a lot of information. This is recognised that this is a limitation of the graphic, however it also communicates how existing research presents an overwhelming number of influences on student belonging.

Nature of relationship has been split into three categories: factors where some connection to belonging has been established in qualitative research, factors that have been shown to have some connection to belonging in quantitative studies that used tests of statistical significance, and factors where a significant predictive relationship was able to be established. A recognised limitation of this approach is that statistical significance is often an arbitrary threshold, and no critique was made through this analysis to assess how each study was determining statistical significance. Studies were only considered to have found significant predictive relationships when they utilised appropriate experimental methodologies – such as randomised control trials or quasi-experimental approaches (TASO, 2020). If a factor could fit into more than one category, then it is displayed in the right-most box of the graphic – i.e., a factor connected to belonging through qualitative research and quantitative research showing a significant predictive relationship would be displayed in the significant predictive relationship box.

In determining the degree of replication within studies, the principal determinant of placement within the grid was the number of published studies that had found an association between sense of belonging and the factor in question. However, studies were also ranked higher on this axis when studies found positive associations across a broad range of contexts – such as across multiple institutions, higher education systems and student demographics within study populations. Generally speaking, factors were denoted as having 'some level of replication' after being explored through two or three studies, with

factors being considered as having 'multiple replications' after more than three studies found links with belonging. This approach should not be confused with a meta-analysis that could determine the strength of association and help to prioritise which factors have had the biggest impact on students' sense of belonging. Furthermore, it is recognised that this approach cannot account for priming effects and other biases that affect study counting techniques (Vadillo, Hardwicke and Shanks, 2016). However, study counting within literature reviews is still recognised as a valid approach for recognising the extent to which certain topics have been identified within existing literature (Allen et al., 2024).

Figure 5. Factors affecting student belonging, sorted by degree of replication and significance of relationship established within existing research.

Factors affecting student belonging sorted by degree of replication and nature of relationship established within existing research
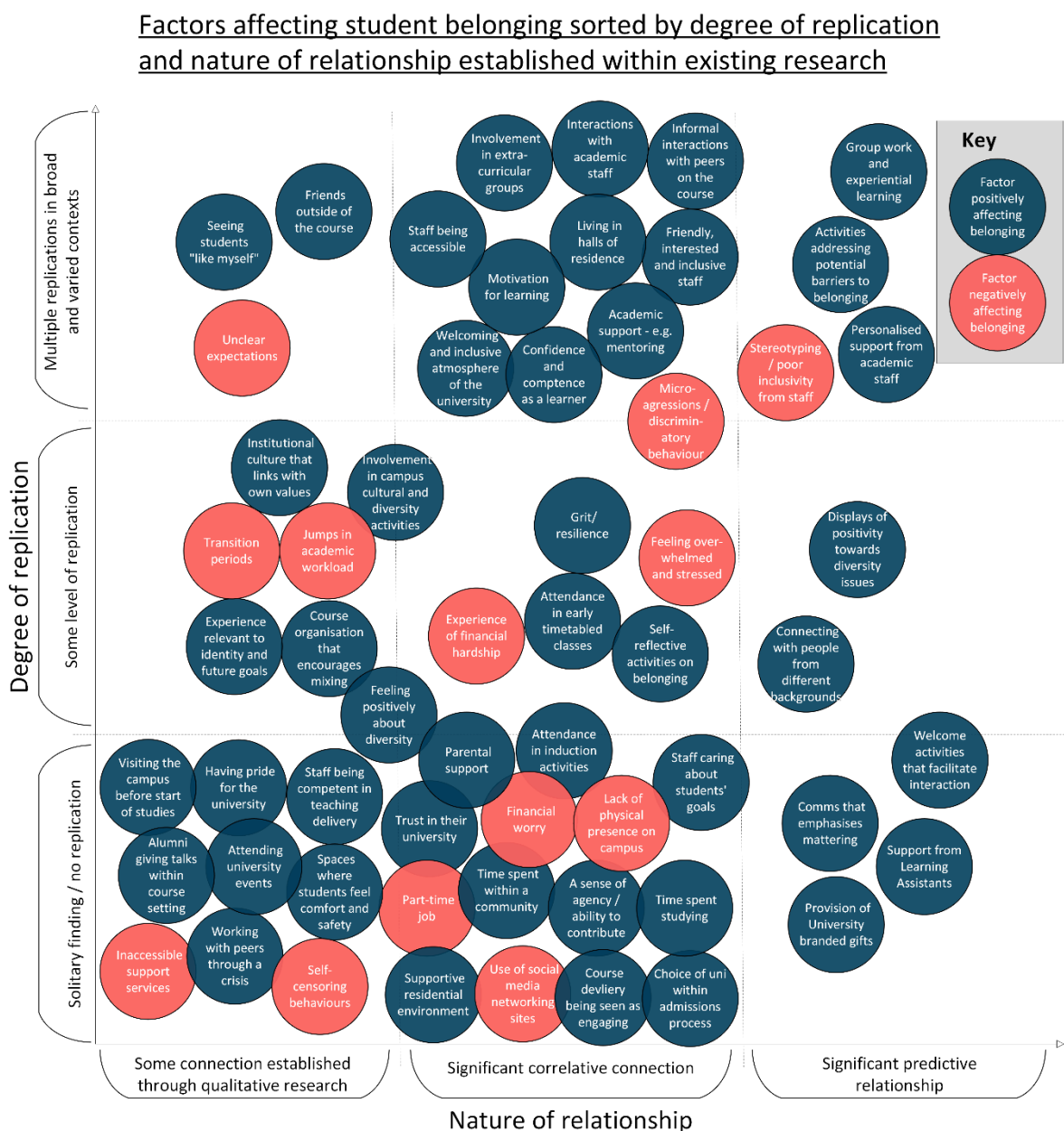
Given the wide variety of studies that relate to this research question, it is not surprising that there are many identified factors that affect students' sense of belonging. Existing research has identified many factors that can either positively or negatively impact student belonging. To support readers in being better able to summarise what affects students' sense of belonging according to the studies reviewed, Figure 6 groups together all factors thematically. In the plotting of all initial factors, it was recognised that the vast majority of studies and factors are not within students' control. To visualise this, Figure 6 has sorted grouped factors based on the degree of influence that students have over them. The grouping of factors into these thematic groups – generating analytical themes – and the extent to which students have influence over them are displayed based on the author's personal perception and judgement, so are both open to critique (Thomas and Arden, 2008).

Figure 6. Factors affecting student belonging, thematically grouped and sorted by degree of student control over them.
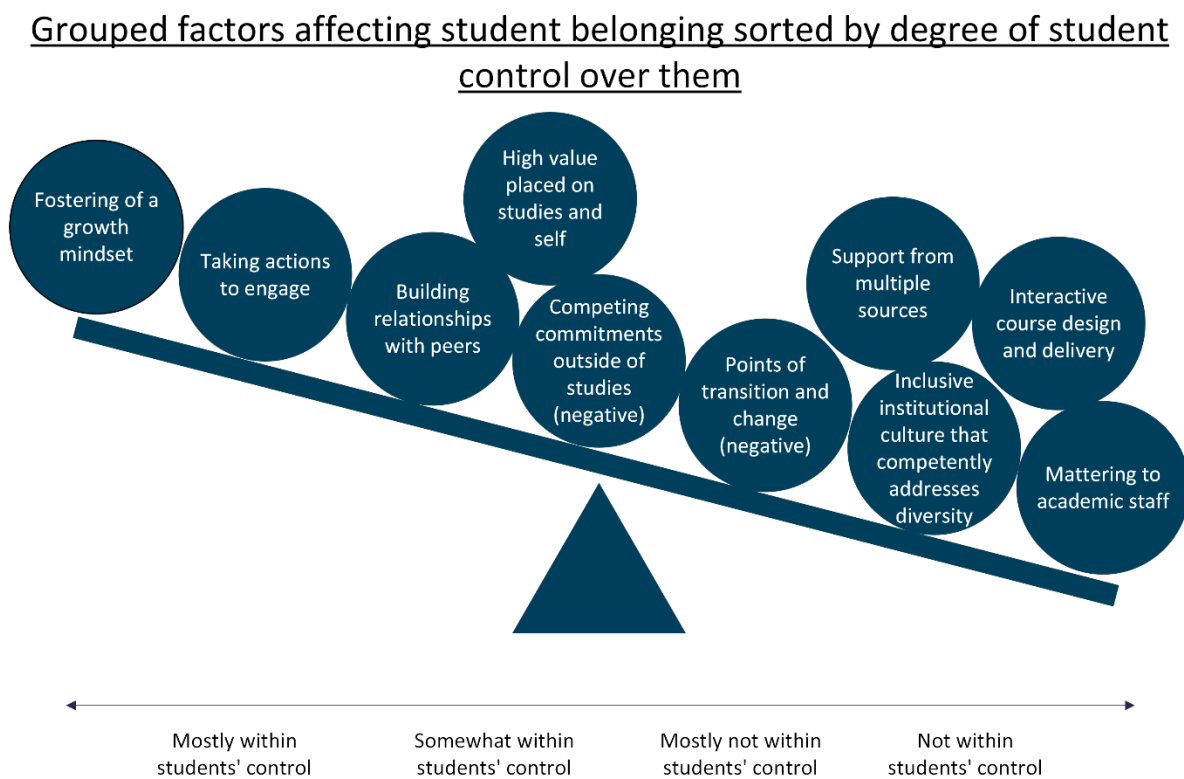
In summary, many factors can influence students' sense of belonging – either in a positive or negative way. For most of the discovered factors, students rely on universities to provide the right conditions, as they are not within the control of the individual student to implement. However, some factors are more within students' control, such as taking

actions to engage and the fostering of a growth mindset for belonging. The analyses used to address this research question have been able to show how prominently each factor has been addressed within existing research and the nature of the association between belonging and that factor. However, further research utilising meta-analysis techniques would be needed to prioritise which factors have the greatest influence on students' sense of belonging. Although it should be recognised that this approach would only be able to consider quantitative studies on student belonging, thereby missing out a significant portion of the existing research.

Discussion

This article has highlighted the extent to which research on university students' sense of belonging has expanded in recent years. As more and more studies investigate how students' sense of belonging is formed and relates to their success at university, literature reviews like this one can provide an important role in helping to take stock of what has been explored and demonstrated across the expanding literature, thus helping to identify key findings and future gaps for exploration. Towards these aims, this discussion section begins by briefly connecting the two research questions to broader literature, before expanding on a set of recommendations for practice and critical examination of limitations of this review.

The clear links between belonging and student success that have been identified in previous studies reinforces the message of other recent literature reviews: that belonging is more than just a buzzword (Allen et al., 2024). Student belonging has a significant connection to many aspects of student success. However, the wide range of success outcomes that have been linked to improved sense of belonging amongst students may reflect the variation in how the concept has been conceptualised and measured within existing research (Lingat, Toland and Sampson, 2022). With a wide variety of named scales, in addition to many studies that use bespoke scales and even single-item measurements for belonging, there is a risk that we are measuring different concepts across different studies. This of course, reduces the ability of review studies, such as this one, in being able to pull together findings across the literature.

Through the substantial literature on this topic, a wide variety of factors have been connected – positively and negatively – with building student belonging. There is clear motivation for universities to address these factors, given the extensive research connecting belonging and different aspects of student success (Figure 4). However, the number of factors identified may be overwhelming to practitioners, with a lack of clarity around where to start. One potential explanation for the wide variety of factors influencing students' sense of belonging could be the inherently individual and personal nature of student belonging as a concept (Strayhorn, 2019; Cheng et al., 2023). As noted by Strayhorn, 'What works for helping one to belong may not work for someone else' (Strayhorn, 2019, p.99). This individualised nature of belonging could help explain why so many different factors are identified by students as influencing their sense of belonging. This distinction is important, as it means that not all of these factors will be important for all students to feel a sense of belonging. Practitioners should consider the individual belonging needs that students bring with them to university based on their identities and previous experiences of belonging from their broader lives (Pedler, Willis and Nieuwoudt, 2022; Gilani, 2024).

However, another potential explanation for the broad and extensive array of factors affecting student belonging could be that what helps students to feel a sense of belonging isn't the mere existence of certain higher education activities, but the *way* that they are constructed and delivered. This explanation aligns with the notion of relational pedagogies, which Gravett, Taylor and Fairchild argue provide a new lens to explore student engagement in higher education: 'pedagogies of mattering offer new ways in which to understand the breadth of actors which impact our learning and teaching relationships, and which shape the conditions and experiences of care' (2021, p.400).

In the process of addressing the second research question of this article, a large number of factors – 58 – were identified as having been shown to have either a positive or negative impact on students' sense of belonging within the included literature. Through grouping these factors together (Figure 6), this article has also identified a set of areas where practitioners can focus their efforts to enhance students' sense of belonging. Recommendations have been ordered, prioritising those where learning developers are likely to have the most potential for influence and enhancement:

1. Interactive pedagogies provide opportunities for students to connect (Thacker et al., 2022). Teaching and learning approaches that include group work (Masika and Jones, 2016), formative assessments that involve interactions with both staff and peers (Harben and Bix, 2019) and other experiential learning pedagogies (Matheson and Sutcliffe, 2016), were all found to be positive enablers for students' sense of belonging.

2. Building relationships with academic staff was the factor of belonging covered more than any other in existing academic research (Smith and Watson, 2022). It is crucial that students see staff members as accessible, friendly, and caring about their goals as a student (Zhang, Li and Unger, 2022; Boswell, 2024).

3. However, when students are asked about what makes them belong, it is building connections with peers that occurs most commonly in their answers (Ahn and Davis, 2020; Stephens and Morse, 2022), so facilitating this should be a priority for practitioners. The most relevant of these is the socio-academic relationships that students build with peers on their course of study (Thomas, 2012); however, opportunities to connect through extra-curricular groups (Harrel-Hallmark et al., 2022) and in living spaces (Duran et al., 2020) are important as well.

4. Students and university staff can partner in the development of growth belonging mindsets. By proactively addressing potential barriers to belonging and providing space for self-reflective activities, students can build resilience, which has a virtuous, reciprocal relationship with belonging (Grüttner, 2019; Murphy et al., 2020).

5. Inclusive institutional cultures that competently address diversity matter to students. Students from marginalised backgrounds are likely to face discrimination (Lewis et al., 2019) that leads to self-editing behaviours (Joubert and Sibanda, 2022) – both barriers to building a strong sense of belonging. A welcoming and inclusive institutional culture can help minimise such negative experiences and ensure students feel supported (van Gijn-Grosvenor and Huisman, 2020).

6. Self-confidence in studies helps to build belonging (O'Shea, 2020). Students also need to see how what they are studying links to their own long-term goals (Thomas, 2012; Rainey et al., 2018). This can be achieved through regular, positive feedback with students about their progress (Lim, Atif and Farmer, 2022).

7. Students' being able to access wrap-around support from multiple sources contributes to their sense of belonging. Students look for reassurance and support in many different places – such as utilising peers as classroom learning assistants

(Clements et al., 2022), alumni returning to classes to provide talks (Stephens and Morse, 2022), and accessible support services (Holley, Kane and Volpe, 2014). Any of these can be a positive enabler or barrier to students' developing a positive sense of belonging.

8. Transition periods present challenges to belonging (Tang et al., 2022). This can include when students start university, but also when changes in academic workload led them to feeling overwhelmed and unable to cope at university (Jones et al., 2018; Carales and Nora, 2020). Clear communications that lay out what is expected of students can help during these periods (Read, Archer and Leathwood, 2003).

9. Students' commitments outside of university may compete with activities to belong (Tao, Long and Wu, 2008). Some of these commitments – such as those related to students' financial security (Taylor et al., 2022) – may not be within their control, so students should not be reprimanded for them. Instead, institutions can help students to plan how other commitments can fit alongside their studies.

Limitations and recommendations for future research

Whilst this review has utilised a defined protocol in its search and appraisal of studies, as a single-author review there is an increased risk of bias in searching, screening, and data selection (Uttley and Montgomery, 2017). Furthermore, there are challenges to the replicability of searches using Google Scholar (Gusenbauer and Haddaway, 2020). This is why the search and appraisal of studies should be considered systematised, rather than systematic. The focus on primary research studies was one decision to help allow more consistent analyses to be conducted, but this does restrict the variety of studies that could be included. Similarly, sector reports and research that were not peer-reviewed articles were not included, though these invariably provide significant value to the discussion, especially around practical matters. Furthermore, whilst the thematic analysis approach is useful for establishing commonalities between studies, and thus the development of models, it is less useful to establishing the differences between existing literature. Whilst the review was global in its approach, the inclusion of only studies available in English limits this.

In the analyses, factors and success outcomes linked to belonging were categorised based on whether studies had established statistical significance of relationships. No critique was made within this review around the approach used within each individual study to establish statistical significance or to address differences between how studies assessed statistical significance. Furthermore, when grouping factors into thematic groups, the focus on using the author's personal judgement for how to categorise and suggest the degree of control students have over that factor, introduces an inherently subjective approach, which challenges the systematised nature of the rest of the review.

Given the breadth of this critical literature review on student belonging, there were plenty of aspects of the topic that this article could not cover. Future research could investigate:

1. The similarities and differences between commonly used student belonging scales, and the extent to which these scales have produced compatible or contrasting findings.

2. Which factors contribute most to a students' sense of belonging. Some studies did attempt to answer this, both through qualitative and quantitative methods, but analysing this prioritisation was out of the scope of this research.

3. How students' belonging levels change over time. This could provide a baseline for understanding when increases and decreases in belonging levels could be expected throughout different stages of the student lifecycle.

4. Aspects of student success where belonging has been shown to be significantly connected, but not yet established as a causal prerequisite of that aspect of student success – such as student satisfaction (Figure 4).

5. Factors of belonging that so far have had little replication in additional studies or only shown to have a qualitative connection (Figure 5).

6. Aspects of student success where belonging may have a two-way directional relationship – for example resilience, self-efficacy, help-seeking adaptive behaviours, and engagement. In particular, future research could explore whether students who already find it easier to belong, due to various other factors, are also those who find it easier to make efforts to engage. Most studies that have examined these factors have not utilised experimental methodologies that can assess whether increasing efforts to engage links to increases in students' sense of belonging.

7. Whole-of-institution approaches to student belonging, so that research can investigate how multiple interventions to build belonging can co-exist.

Conclusions

In conclusion, existing research on students' sense of belonging has robustly connected the concept to various different aspects of student success. This includes students' likelihood to continue successfully in their studies, academic achievement, and even mental health and wellbeing during studies. Given the promise of these connections between belonging and student success, practitioners should turn their attention to the similarly expansive literature exploring what factors affect students' sense of belonging. This review has identified a core, yet still somewhat expansive, group of factors that positively and negatively affect students' sense of belonging, grouping, and summarising these as recommendations for practice. Whilst this may help as a starting point for practitioners, future research that takes a meta-analysis approach may be best placed to help identify which factors have the biggest impact on students' sense of belonging, based on existing quantitative research on this topic.

Acknowledgements

References

References only appear here if they were cited in the main body of this article. A full list of articles included within the review itself is presented in Appendix 2.

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Appendices

Appendix 1: Search approach, terms and timing for literature review.

Appendix 2: Studies included within systematised, critical review of student belonging literature (separate document).

Appendix 3: Belonging as a prerequisite of student success outcomes.

Appendix 4: Factors that affect students' sense of belonging.

Appendix 1: Search approach, terms and timing for literature review

Table 1. Search criteria and stages for systematised student belonging review.

Review approach	Systematised, critical literature review	
Database(s) / search engines used:	British Educational Index (EBSCO).	Google Scholar.
Search date:	7th February 2023	7th February 2023
Date limiters:	No date limiters used. However, the search in Google Scholar was split into multiple searches by date to avoid any single search returning more than 1000 items.	
Search type:	Full text search	Full text search
Terms searched:	('Student belonging' OR 'Students' sense of belonging') AND ('Higher education' OR 'University').	'Student belonging' AND 'Higher education'.
Total search results	519.	2601 (this is the amalgamated total of the individual searches in Google Scholar by different date limiters. Unfortunately, records were not kept of the number retrieved from each individual search).

Without duplicates	2736 (bringing together studies from both searches).
Title review phase	597 (Notes: Articles were removed if not specifically related to higher education, student belonging, or non-English, or non-published works).
Abstract review phase	147 (Notes: articles were removed if not related to either of the two identified research questions, if full text could not be accessed, if did not include any primary research (for example, thought pieces or literature reviews)).
Full text screening	118 (Notes: articles were removed if full text was not related to either of the two identified research questions, if studies did not sufficiently define or explain how they measured students' sense of belonging, or where there were clear methodological gaps (i.e., missing details about sample of students included in the primary research). Forty studies were determined to provide results relevant to research question 1 and ninety studies relevant to research question 2.

Appendix 3: Belonging as a prerequisite of student success outcomes

Table 3. Different student success outcomes that were linked to belonging within studies included in the systematised, critical review of student belonging literature.

Student outcome	Studies	Type of connection	Replication levels
Retention	Soria and Stubblefield, 2015; Davis and Hanzsek-Brill, 2019; García, Garza and Yeaton-Hromada, 2019; Gopalan and Brady, 2019; Fink, Frey and Solomon, 2020; Murphy et al., 2020; Russell et al., 2022.	Significant predictive connection.	Multiple replication.

Intention to persist	Hausmann, Schofield and Woods, 2007; Booker, 2016; Russell and Jarvis, 2019; Boyd, Liu and Horissian, 2022; Kahu, Ashley and Picton, 2022; Pedler, Willis and Nieuwoudt, 2022.	Significant predictive connection.	Multiple replication.
Self-efficacy and confidence	Freeman et al., 2007; Zumbrunn et al., 2014; Holloway-Friesen, 2019; Kahu, Ashley and Picton, 2022.	Significant connection.	Multiple replication.
Academic motivation / task Value	Freeman, Anderman and Jensen, 2007; Zumbrunn et al., 2014; Mulrooney and Kelly, 2020.	Significant connection.	Some replication.
Academic performance	Hurtado and Carter, 1997; Tao, Long and Wu, 2008; Zumbrunn et al., 2014; Buskirk-Cohen and Plants, 2019; De Beer, Smith and Jansen, 2019; Chen et al., 2020; Fink, Frey and Solomon, 2020; Cwik and Singh, 2022; Sotardi, 2022; Veldman, Meeussen and van Laar, 2023.	Significant predictive connection.	Many replications.
Engagement	Zumbrunn et al., 2014; Korhonen et al., 2019; Kahu, Picton and Nelson, 2020; Mulrooney and Kelly, 2020; Versteeg, Kappe and Knuiman, 2022; Veldman, Meeussen and van Laar, 2023.	Significant connection.	Multiple replication.
Cognitive engagement	Luo et al., 2022; Maluenda-Albornoz and Berríos-Riquelme, 2022.	Significant connection.	Some replication.
Behavioural engagement	Wilson et al., 2015; Gillen-O'Neel, 2021; Luo et al., 2022;	Significant predictive connection.	Multiple replication.

	Maluenda-Albornoz and Berríos-Riquelme, 2022.		
Affective / Emotional engagement	Wilson et al., 2015; Gillen-O'Neel, 2021; Luo et al., 2022; Maluenda-Albornoz and Berríos-Riquelme, 2022.	Significant predictive connection.	Multiple replication.
Mental health and wellbeing	Stebleton, Soria and Huesman, 2014; Gopalan and Brady, 2019; Boyd, Liu and Horissian, 2022; Dopmeijer et al., 2022; Gopalan et al., 2022; Kahu, Ashley and Picton, 2022; Veldman, Meeussen and van Laar, 2023.	Significant predictive connection.	Some replication.
Resilience	Ali et al., 2018; Grüttner, 2019.	Significant connection.	Some replication.
Thriving	Mendoza, Suarez and Bustamente, 2016; Boyd, Liu and Horissian, 2022.	Significant connection.	No replication.
Student satisfaction	Boyd, Liu and Horissian, 2022.	Significant connection	No replication
Adapted help-seeking strategies	Gopalan and Brady, 2019; Won, Hensely and Wolters, 2019.	Sometimes significant connection.	Some replication.
Academic misconduct intentions (negative)	Coetzee et al., 2022.	Significant connection.	No replication.
Social background concealment (negative)	Veldman, Meeussen and van Laar, 2023.	Significant predictive connection.	No replication.

Appendix 4: Factors that affect students' sense of belonging.

Table 4. Factors that affect students' sense of belonging, identified from studies included within the systematised, critical review of student belonging literature.

Factors	Studies	Significance of relationship	Degree of replication	Theme
Informal interactions with peers on the course	Hurtado and Carter, 1997; Hausmann, Schofield and Woods, 2007; Meeuwisse, Severiens and Born, 2010; Thomas, 2012; Masika and Jones, 2016; Vaccaro and Newman, 2016; Knekta and McCartney, 2018; Kepple and Coble, 2020; Cruz and Grodziak, 2021; Kahu and Thomas, 2022; Luo et al., 2022; Stephens and Morse, 2022; Thacker et al., 2022.	Significant connection.	Many replications.	Building relationships with peers.
Involvement in extra-curricular groups	Hurtado and Carter, 1997; Maestas et al., 2007; Strayhorn, 2012; Kane, Chalcraft and Volpe, 2014; Gieg, 2016;	Significant connection (although not always).	Many replications.	Building relationships with peers.

	Vaccaro and Newman, 2016; Camerato et al., 2019; Duran et al., 2020; Cruz and Grodziak, 2021; Viola, 2021; Ahn and Davis, 2022; Byl et al., 2022; Cohen and Viola, 2022; Harrel-Hallmark and Castles, 2022			
Friends outside of the course	Slaten et al., 2016; Picton, Kahu and Nelson, 2017; Jones et al., 2018; Meehan and Howells, 2018; Rainey et al., 2018; Russell and Jarvis, 2019; van Gijn-Grosvenor and Huisman, 2020; Kahu, Picton and Nelson, 2020; Cohen and Viola, 2022; Rudman, 2022.	No significance established.	Many replications.	Building relationships with peers.
Welcome and orientation activities that facilitate interaction	Johnson et al., 2007; Slaten et al., 2016; Cruz and Grodziak, 2021.	Significant predictive connection.	Little replication.	Building relationships with peers.

Living in halls of residence	Maestas et al., 2007; Strayhorn, 2008; Strayhorn, 2012; Means and Pyne, 2017; Duran et al., 2020.	Significant connection (although not always).	Many replications.	Building relationships with peers.
Working together with peers through a crisis (pandemic)	Tang et al., 2022.	No significance established.	No replication.	Building relationships with peers.
Part-time job	Tao, Long and Wu, 2008.	Significant connection.	No replication.	Competing commitments.
Use of social media networking sites	Strayhorn, 2012.	Significant connection.	No replication.	Competing commitments.
Choice of uni within admissions process	Kane, Chalcraft and Volpe, 2014.	Significant connection.	No replication.	Competing commitments.
Financial worry	Carales and Nora, 2020.	Significant connection.	No replication.	Competing commitments.
Experience of financial hardship	Carales and Nora, 2020; Taylor et al., 2022.	Significant connection.	Some replication.	Competing commitments.
Lack of physical presence on campus	Mulrooney and Kelly, 2020.	Significant connection	No replication.	Competing commitments.

Group work and experiential learning	Masika and Jones, 2016; Lui, Poon and Ng, 2018; Matheson and Sutcliffe, 2018; Harben and Bix, 2019; Wilton et al., 2019; Caligiuri et al., 2020; Carales and Nora, 2020; Gijn-Grosvenor and Huisman, 2020; Fisher and Machirori, 2021; Rudman, 2022; Thacker et al., 2022.	Significant predictive connection (mostly).	Many replications.	Course delivery that connects.
Organisation of classes that encourages students to mix	Glass et al., 2015; Knekta and McCartney, 2018.	No significance established.	Some replication.	Course delivery that connects.
Transition periods	Russell and Jarvis, 2019; Tang et al., 2022.	No significance established.	Some replication.	Feeling unsupported through change.
Unclear expectations	Read, Archer and Leathwood, 2003; Graham, 2022; Zhang, Li and Unger, 2022.	No significance established.	Multiple replications.	Feeling unsupported through change.
Jumps in academic workload	Meehan and Howells, 2018; Jones et al., 2018.	No significance established.	Some replication.	Feeling unsupported through change.

Feeling overwhelmed and stressed	Carales and Nora, 2020.	Significant connection.	No replication.	Feeling unsupported through change.
Time spent within a community	Cicognani, Menezes and Nata, 2011.	Significant connection.	No replication.	Fostering of a growth mindset.
A sense of agency / ability to contribute	Cicognani, Menezes and Nata, 2011.	Significant connection.	No replication.	Fostering of a growth mindset.
Activities addressing potential barriers to belonging	Marksteiner, Janke and Dickhäuser, 2019; Murphy et al., 2020; Strayhorn, 2021.	Significant predictive connection.	Multiple replications.	Fostering of a growth mindset.
Self-reflective activities	Knox et al., 2020; Cook-Sather and Seay, 2021; Rudman, 2022.	Significant connection.	Little replication.	Fostering of a growth mindset.
Grit / resilience	Buskirk-Cohen and Plants, 2019; Versteeg, Kappe and Knuiman, 2022.	Significant connection.	Some replication.	Fostering of a growth mindset.
Online course delivery being seen as engaging	Blignaut et al., 2022.	Significant connection.	No replication.	High value placed on studies.
Motivation for learning	Strayhorn, 2012; Rainey et al., 2018; Abbasi and Hadi, 2021; Pedler, Willis and Nieuwoudt, 2022.	Significant connection.	Multiple replications.	High value placed on studies and self.

Confidence and competence as a learner	Thomas, 2012; Slaten et al., 2016; Knekta and McCartney, 2018; Rainey et al., 2018; Kepple and Coble, 2020; O'Shea, 2020; Thacker et al., 2022.	Significant connection.	Multiple replications.	High value placed on studies and self.
Course experience relevant to identity and future goals	Thomas, 2012; Slaten et al., 2016; Rainey et al., 2018.	No significance established.	Some replication.	High value placed on studies and self.
Needing to self-edit how you behave	Joubert and Sibanda, 2022.	No significance established.	No replication.	Inclusive institutional culture that competently addresses diversity.
Institutional culture that links with own values	Read, Archer and Leathwood, 2003; van Gijn-Grosvenor and Huisman, 2020; Viola, 2021.	No significance established.	Multiple replications.	Inclusive institutional culture that competently addresses diversity.
Having pride for the university and its reputation	Cohen and Viola, 2022.	No significance established.	No replication.	Inclusive institutional culture that competently addresses diversity.
Welcoming and inclusive atmosphere	Maramba and Museus, 2013; Slaten et al., 2016;	Significant connection.	Many replications.	Inclusive institutional culture that

of the university	Vaccaro and Newman, 2016; Matheson and Sutcliffe, 2018; Meehan and Howells, 2018; van Gijn-Grosvenor and Huisman, 2020.			competently addresses diversity.
Trust in their university	Williams et al., 2022.	Significant connection.	No replication.	Inclusive institutional culture that competently addresses diversity.
Spaces where students feel comfort and safety	Guyotte, Flint and Latopolski, 2019.	No significance established.	No replication.	Inclusive institutional culture that competently addresses diversity.
Micro-aggressions and experiencing discriminatory behaviour	O'Meara et al., 2017; Carales and Nora, 2020; Hussain and Jones, 2021; Lewis et al., 2021.	Significant connection.	Multiple replications.	Inclusive institutional culture that competently addresses diversity.
Stereotyping / poor inclusivity from academic staff	Newman, Wood and Harris, 2015; Kahu, Picton and Nelson, 2020; Keating, Rixon and Perenyi, 2020.	Significant predictive connection.	Multiple replications.	Inclusive institutional culture that competently addresses diversity.

Feeling positively about diversity	Manaze and Ford, 2021; Owusu-Agyeman, 2022.	Significant connection.	Some replication.	Inclusive institutional culture that competently addresses diversity.
Involvement in campus cultural and diversity activities	Manaze and Ford, 2021; Owusu-Agyeman, 2022.	Significant connection (although not always).	Some replication.	Inclusive institutional culture that competently addresses diversity.
Displays of positivity towards diversity issues	Maestas et al., 2007; Carter at al., 2017; Hussain and Jones, 2021; Keyser et al., 2022.	Significant predictive connection.	Some replication.	Inclusive institutional culture that competently addresses diversity.
Seeing students 'like myself'	Read, Archer and Leathwood, 2003; Pascale, 2018; Russell and Jarvis, 2019; Kahu, Ashley and Picton, 2022.	No significance established.	Multiple replications.	Inclusive institutional culture that competently addresses diversity.
Connecting with people from different backgrounds	Strayhorn, 2008; Baleria, 2019; Brunsting et al., 2019; Hussain and Jones, 2021; Viola, 2021.	Significant predictive connection.	Some replication, but mainly Qual.	Inclusive institutional culture that competently addresses diversity.
University branded gifts	Hausmann, Schofield and Woods, 2007.	Significant predictive connection.	No replication.	Inclusive institutional culture that competently

				addresses diversity.
Communications that emphasises mattering	Hausmann, Schofield and Woods, 2007.	Significant predictive connection.	No replication.	Inclusive institutional culture that competently addresses diversity.
Interactions and relationships with academic staff	Hurtado and Carter, 1997; Hausmann, Schofield and Woods, 2007; Meeuwisse, Severiens and Born, 2010; Thomas, 2012; Kane, Chalcraft and Volpe, 2014; Glass et al., 2015; Newman, Wood and Harris, 2015; O'Meara et al., 2017; Jones et al., 2018; Knekta and McCartney, 2018; Meehan and Howells, 2018; Russell and Jarvis, 2019; Kahu, Picton and Nelson, 2020; Brodie and Osowska, 2021; Luo et al., 2022; Smith and Watson, 2022; Thacker et al., 2022;	Significant connection (although not always).	Many replications.	Mattering to academic staff.

	Zhang, Li and Unger, 2022.			
Friendly, interested and inclusive staff	Holley, Kane and Volpe, 2014; Glass et al., 2015; Newman, Wood and Harris, 2015; Buskirk-Cohen and Plants, 2019; Cook-Sather and Seay, 2021; McCarthy, Abel and Tisdell, 2021.	Significant connection.	Many replications.	Mattering to academic staff.
Staff caring about students' goals	Maestas et al., 2007; Glass et al., 2015.	Significant connection	Some replication	Mattering to academic staff
Staff being accessible	Glass et al., 2015; Carter at al., 2017; Blignaut et al., 2022; Zhang, Li and Unger, 2022.	Significant connection (although not always).	Multiple replications.	Mattering to academic staff.
Staff being competent in teaching delivery	Blignaut et al., 2022.	No significance established.	No replication.	Mattering to academic staff.
Academic support - e.g. mentoring	Maestas et al., 2007; Holloway-Friesen, 2019; Carales and Nora, 2020.	Significant connection.	Multiple replications.	Support from multiple sources.
Personalised support from academic staff	Curtin, Stewart and Ostrove, 2013; Brunsting et al., 2019; Burk and	Significant predictive connection.	Multiple replications.	Support from multiple sources.

	Pearson, 2022; Schmahl and Nguyen, 2022.			
Support from peers in Learning Assistant roles	Clements et al., 2022.	Significant predictive connection.	No replication.	Support from multiple sources.
Supportive residential environment	Duran et al., 2020.	Significant connection.	No replication.	Support from multiple sources.
Inaccessible support services	Holley, Kane and Volpe, 2014.	No significance established.	No replication.	Support from multiple sources.
Parental support	Hausmann, Schofield and Woods, 2007.	Significant connection.	No replication.	Support from multiple sources.
Alumni giving talks	Stephens and Morse, 2022.	No significance established.	No replication.	Support from multiple sources.
Time spent studying	Strayhorn, 2008	Significant connection.	No replication.	Taking actions to engage.
Attendance in induction activities	Kane, Chalcraft and Volpe, 2014; Byl et al., 2022.	Significant connection.	Some replication.	Taking actions to engage.
Attendance in early timetabled classes	Kane, Chalcraft and Volpe, 2014.	Significant connection.	No replication.	Taking actions to engage.
Visiting the campus before the	Cruz and Grodziak, 2021.	No significance established.	No replication.	Taking actions to engage.

start of studies				
Attending university events	Cruz and Grodziak, 2021.	No significance established.	No replication.	Taking actions to engage.

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