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ARTICLE



A sense of belonging at university: student retention, motivation and enjoyment

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ABSTRACT

A sense of belonging is important as it incorporates feelings of being valued, included and accepted at university. Research suggests that higher education students who have a greater sense of belonging tend to have higher motivation, more academic self-confidence, higher levels of academic engagement and higher achievement. This article presents findings from a questionnaire ($n = 578$) that was developed to explore the relationships between university students' sense of belonging and student retention. The current study found a significant difference in the level of belonging between first-generation students and students whose parents had both completed university. Additionally, students who frequently considered leaving university without completing their degree (i.e. dropping out) had a significantly lower sense of belonging than students who did not. Finally, university students with a higher sense of belonging reported higher motivation and enjoyment in their studies whereas students who reported lower levels of belonging reported lower levels of motivation and enjoyment. This study highlights that university students' sense of belonging is of high importance to higher education institutions as it increases students' academic motivation and enjoyment in their studies, which can impact on student achievement and reduces the likelihood of students considering leaving university before completing their studies, thus contributing to student retention.

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Introduction

Belonging is considered a fundamental psychological need (Baumeister and Leary 1995; Maslow 1968) as it is essential in establishing and sustaining strong relationships with others (Maunder 2018), maintaining academic motivation and contributing to success in higher education (Freeman, Anderman, and Jensen 2010; Gillen-O'Neel 2019). Theoretically, belonging is positioned at the midpoint of Maslow's (1968) Hierarchy of Needs as emerging after basic psychological and safety needs are satisfied, and preceding feelings of esteem and a desire for self-actualisation. With this in mind, satisfying motivation for belonging requires positive affective interactions in a stable and enduring context, with belonging linked to health, wellbeing, and cognitive, emotional and behavioural processes (Baumeister and Leary 1995).

Research has demonstrated that a sense of belonging in educational contexts is promoted by social connections with staff and peers (Watson et al. 2010) and has been linked with students' effort, attention, self-esteem, perseverance, and enjoyment in learning tasks (Ulmanen et al. 2016). In this respect, Ulmanen et al. (2016) posit that it is crucial for students to engage emotionally in learning

activities in order for them to feel part of their educational community. Indeed, students who do not develop or maintain a sense of belonging may disengage from their learning, which may reduce the likelihood of academic success and influence their decision to drop out of their studies (Finn and Zimmer 2012; Osterman 2000). Thus, affective attachments are important as students who experience a sense of belonging are more motivated in academic learning than students who lack feelings of connectedness to their academic institution (Lawson and Lawson 2013). With this in mind, further research into belonging, a fundamental psychological need, is imperative in higher education to develop an understanding of how a sense of belonging may relate to students' academic emotions, motivation, and student retention.

A sense of belonging in higher education

University belonging is described as students' subjective feelings of connection and integration with their institution and campus community (Gillen-O'Neel 2019; Hoffman et al. 2002; Maunder 2018; Soria and Stubblefield 2015). This dynamic psychosocial construct is based on students' perceptions of their educational context and is significantly influenced by interpersonal relationships (Gillen-O'Neel 2019; Maunder 2018; Murphy and Zirkel 2015; Slaten et al. 2016; Thomas 2012). Goodenow and Grady's (1993) definition of belonging as a student's sense of being valued, included and accepted is frequently cited in recent higher education belonging literature (see Maunder 2018; Masika and Jones 2016; Slaten et al. 2016; Thomas 2012) and is the definition adopted in the current study.

In higher education, belonging requires an interaction of environmental, social and cognitive factors that support students' feelings of connectedness to their university, and supports a sense of purpose in relation to their studies and career aspirations (Meehan and Howells 2019). As such, the transition to higher education is considered a critical period of cultural, social and academic adjustment which has been linked to students' academic performance, social integration, motivation and attrition (Araujo et al. 2014). Indeed, the need to belong is central to first year students' transition into higher education as they strive to create new social connections and integrate themselves in a new community (Maunder 2018). While research in this area has focussed on first year students, it is important to note that adjustment to higher education is in fact an ongoing process not just limited to students' first year experience, as students transition through their academic careers and encounter new ideas, processes and expectations (Maunder 2018).

A sense of belonging is especially important for how connected students feel to both the institution and the people within the institution (Gillen-O'Neel 2019). Research suggests that higher education students who have a stronger sense of belonging tend to have more academic self-confidence, higher motivation, higher levels of academic engagement and higher achievement (Gillen-O'Neel 2019; Maunder 2018; Murphy and Zirkel 2015; Osterman 2000; Slaten et al. 2016). Importantly, literature reveals that a higher sense of belonging can have a wider reach than just students' academic performance. It has also been associated with other psychological and socio-emotional benefits that include wellbeing, lower stress, higher self-esteem, ability to manage emotions, and the development of positive relationships (Slaten et al. 2016).

Unsurprisingly, research has linked a higher sense of belonging to student retention (Gillen-O'Neel 2019) as students who do not feel they belong, do not feel connected to their university or feel there is a mismatch between their background and the institution are at risk of discontinuing their studies (Maunder 2018; Thomas 2012). Indeed, understanding student characteristics related to students' sense of belonging provides an opportunity for researchers to address high attrition rates, especially in the first year of university (Freeman, Anderman, and Jensen 2010). With a significant minority of students in higher education considering withdrawal from their studies, belonging is 'critical to student retention and success' (Thomas 2012, 10). Ultimately, the greater a student's sense of belonging at university, the more likely they are to remain in their studies (Hoffman et al. 2002).

Further research into higher education students' sense of belonging is needed to develop a clearer understanding of its role in student motivation and in academic contexts (Freeman, Anderman, and Jensen 2010). Thus, the purpose of the current study is to investigate higher education students' sense of belonging and identify factors that may influence students' sense of belonging at a regional university in Australia. This is important because research has shown that 20% of students are at risk of not completing their studies in Australia (Meehan and Howells 2019). As such, the current study aimed to: (a) assess students' sense of belonging; (b) investigate influences on student rating of sense of belonging; and (c) investigate the relationship between sense of belonging, enjoyment at university, and degree of motivation to study.

Method

A mixed methods questionnaire was developed by the researchers following a review of the student retention literature. This ethically approved online Qualtrics questionnaire (ECN-19-039) exploring student retention was distributed via email to all students in Session 1 2019 to collect a cross-sectional data sample. The questionnaire sought to establish if students had considered leaving university without completing their studies (i.e. dropping out) and the reasons why students chose to remain at university. An information statement for the study was provided to participants at the beginning of the online questionnaire and consent was implied through questionnaire completion. Participation was voluntary and participants could withdraw at any time prior to submitting their anonymous responses.

Measures

The questionnaire included a number of scales relevant to the exploration of student retention. Of significance to the current paper, a scale to measure university student belonging was adapted from the Sense of Belonging Index originally developed for the Programme for International Student Assessment (PISA) 2003. This index has been used internationally since its development and was used with 35 Organization for the Economic Cooperation and Development (OECD) countries in PISA 2015 (ACER 2018) with secondary students' aged between 15 years and three months and 16 years and 2 months to measure students' sense of belonging. This scale was selected and adapted for inclusion in the current study as it is an established, internationally implemented index used to measure a sense of belonging. Internal reliability of the scale has been shown to be high in Australia (Cronbach's $\alpha = .856$) and other OECD countries (mean Cronbach's $\alpha = .839$) (OECD 2018).

For each of the six items in the index, the word 'school' was replaced with 'university' for use in a higher education rather than secondary school setting. The original Sense of Belonging Index from PISA allowed students to respond *strongly agree*, *agree*, *disagree*, or *strongly disagree*. In the current study, an additional option of 'neither agree nor disagree' was included to provide participants a neutral response option. A Likert scale theoretically has equal intervals among responses (Creswell 2012) and the inclusion of a neutral option allowed participants with an option between 'agree' and 'disagree', making it a 5-point Likert scale in the current study. The items included in the current questionnaire to measure belonging were: I feel like an outsider (or left out of things) at university; I make friends easily at university; I feel like I belong at university; I feel out of place at university; Other students seem to like me; I feel lonely at university.

Students' motivation and enjoyment were measured using single questions on 5-point Likert scales. These scales collected self-reported measures from participants in response to the questions 'Generally, how motivated are you to study?' (1 - *not at all motivated*, 5 - *very motivated*) and "Do you enjoy studying at university? (1 - *none of the time*, 5 - *all of the time*). Ordinal data has been found to be a valid and reliable approximation of a continuous variable when there are five or more levels included (Johnson and Creech 1983; Norman 2010; Sullivan and Artino 2013; Zumbo and Zimmerman 1993), such as the 5-point Likert scale used above.

Table 1. Frequency, percent, and valid percent (percent of non-missing data) of demographic and study-related variables.

		Frequency	Percent	Valid Percent
Age	18–19	42	7.30	7.40
	20–24	115	19.90	20.30
	25–29	57	9.90	10.10
	30–34	60	10.40	10.60
	35–39	68	11.80	12.00
	40–44	54	9.30	9.50
	45–49	63	10.90	11.10
	50–54	43	7.40	7.60
	55–59	35	6.10	6.20
	60+	30	5.20	5.30
Gender	Missing	11	1.90	
	Female	409	70.80	73.30
	Male	149	25.80	26.70
	Missing	20	3.50	
Study load	Full-time	319	55.20	58.30
	Part-time	228	39.40	41.70
	Missing	31	5.40	
Study mode	On-campus	257	44.50	50.30
	Online	254	43.90	49.70
	Missing	67	11.60	
Current year of study	1st year	196	33.90	38.80
	2nd year	154	26.60	30.50
	3rd year	109	18.90	21.60
	4th year	46	8.00	9.10
	Missing	73	12.60	
Parents with a university degree	One	122	21.10	22.30
	Both	59	10.20	10.80
	Neither	356	61.60	65.10
	I'm not sure	10	1.70	1.80
Considered leaving university without completing	Missing	31	5.40	
	Never	131	22.70	22.70
	Just once	112	19.40	19.40
	Sometimes	246	42.60	42.60
	Often	89	15.40	15.40

Participants

The online questionnaire was completed by 578 participants. Table 1 depicts the demographic and descriptive makeup of the sample. Participants ranged from 18 years to over 60 years of age, there was a higher proportion of female respondents, and a fairly balanced representation from both part-time/full-time and on-campus/online students. Students in their first, second and third years are fairly evenly represented in the data. Also included in Table 1, and of interest to the current study, are the frequency of students who reported that one parent, both parents, or neither parent had a university degree, and how frequently participants had considered leaving university without completing their studies. These final two points will be elaborated on in the results and discussion sections.

Data analysis

Descriptive statistics and inferential statistical tests were used to explore the study population's characteristics. Principal Component Analysis was used to investigate the underlying factor structure of the six items of the Sense of Belonging Index within the study's sample. Variables were normally distributed, thus parametric tests were used. The level of significance was set at $p \leq .05$. All comparisons tested were between-groups designs (e.g. one-way between groups ANOVA). Bonferroni corrections were made to control for possible type 1 error for contrast analyses. Pearson correlations were calculated to assess the relationship between Sense of Belonging, enjoyment at university, and degree of motivation to study. Statistical analyses were performed using IBM SPSS Statistics version 26.

Results

To investigate the underlying factor structure of the six items of the Sense of Belonging Index within the sample, Principal Component Analysis was performed on the data from the 578 participants. Based on Eigenvalues exceeding 1 and assessment of the scree plot, one clear factor was retained, explaining just under 60% of the variance in the data (see Table 2). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was sufficiently high ($KMO = .829$). Internal reliability was found to be very good for the Sense of Belonging Index, as can be seen by Cronbach's alpha in Table 2. This factor can be interpreted as a Sense of Belonging at university. Total scores on this scale can range from six to 30, with higher scores indicating a higher Sense of Belonging.

Table 2. Factor loadings, variance explained, and Cronbach's alpha for the Sense of Belonging Index.

Item	Loading
I feel lonely at university	.814
I feel like an outsider (or left out of things) at university	.800
I feel out of place at university	.795
I feel like I belong at university	-.784
I make friends easily at university	-.774
Other students seem to like me	-.626
Variance explained (%)	58.99
Cronbach's alpha	0.859

Figure 1 depicts participants' self-reported Sense of Belonging as a single score based on the factor analysis with the scores ranging from 6 to 30 (i.e. six items using a 5-point Likert Scale). Higher scores indicate higher levels of sense of belonging. As can be seen, student levels of sense of belonging range from very low to very high in this sample.

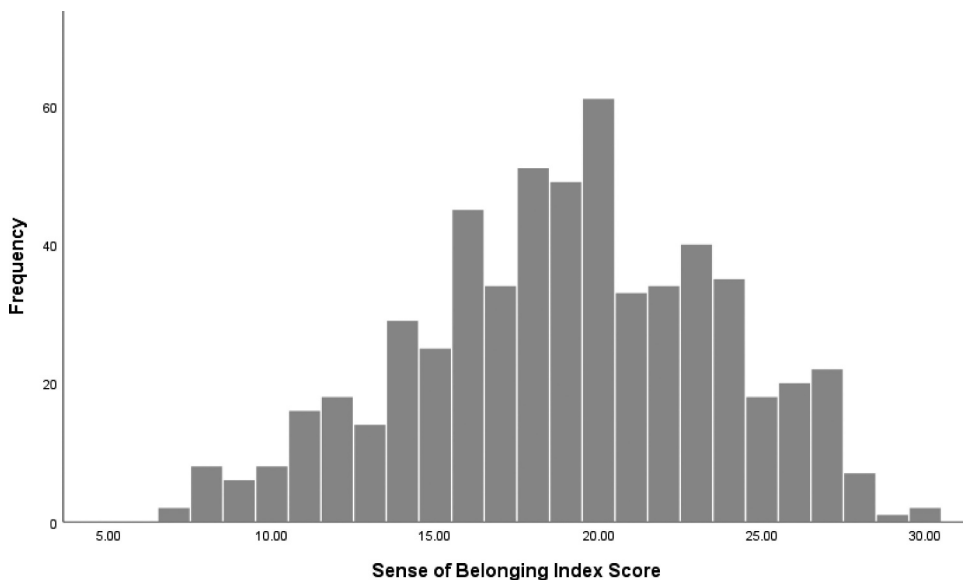


Figure 1. Frequency of participants' Sense of Belonging (6 = very low belonging, 30 = very high belonging).

Influences on student rating of Sense of Belonging were assessed. All comparisons tested were between-groups designs. Assumptions of normality and homogeneity of variances were assessed with no violations found unless reported. To begin with, demographics external to the university were assessed. Differences in students' Sense of Belonging scores were found when students' Sense of Belonging between students with Both, One, or Neither parents having a university degree was compared (see Figure 2). A one-way between groups ANOVA revealed a significant effect, $F(2, 536) = 3.91$, $p = .021$, $\eta^2 = .014$. This is considered a small effect size according to Cohen (1988) explaining approximately 1.4% of the variance in sense of belonging scores. Post hoc tests using Bonferroni adjustment revealed that students with both parents having a university degree reported higher levels of Sense of Belonging than those with one parent having a university degree ($p = .035$) and those with neither parent having a university degree ($p = .019$). There was no difference in mean Sense of Belonging scores between students with one or neither parent having a university degree ($p = .991$).

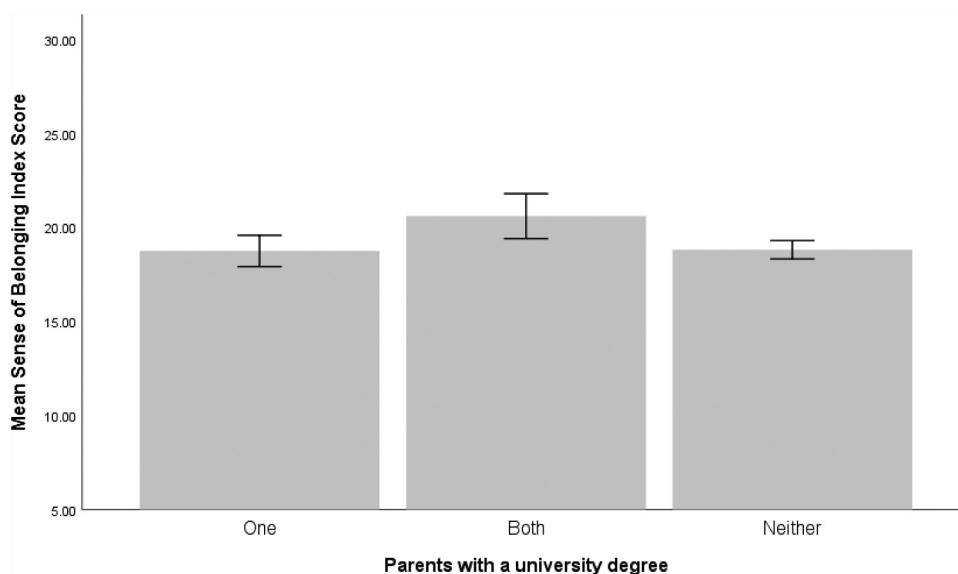


Figure 2. Mean Sense of Belonging Index scores for student with one, both, or neither parents having a university degree. Error bars represent 95% Confidence Intervals.

Next, factors internal to the university were assessed. To explore this, Sense of Belonging between students with different histories of considering leaving university without completing (*Never, Just Once, Sometimes, Often*) was compared (see Figure 3). A one-way between groups ANOVA revealed a significant effect, $F(3, 574) = 41.77$, $p < .001$, $\eta^2 = .179$. This is considered a large effect size according to Cohen (1988) explaining approximately 18% of the variance in Sense of Belonging scores. Post hoc tests using Bonferroni adjustment revealed that there was no significant difference in Sense of Belonging between students who reported considering leaving without completing *never* or *just once* ($p = .233$). Students reporting *sometimes* considering leaving without completing had a significantly lower Sense of Belonging mean score than those reporting *just once* ($p = .001$) and *never* ($p < .001$), and students reporting *often* considering leaving without completing had a significantly lower Sense of Belonging mean score than all other groups ($p < .001$).

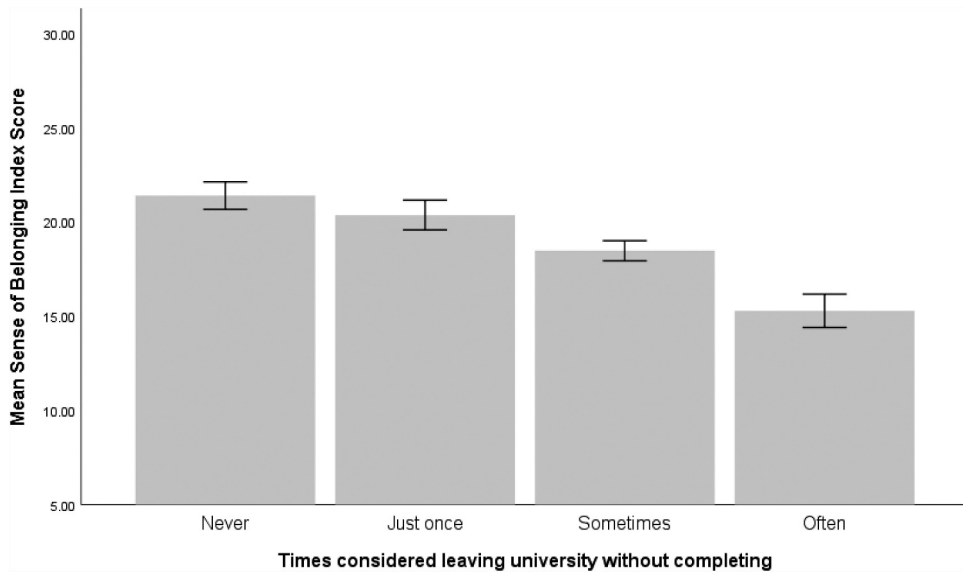


Figure 3. Mean Sense of Belonging Index scores for student groups differing on previous consideration for leaving university without completing. Error bars represent 95% Confidence Intervals.

Pearson correlations were calculated to assess the relationship between Sense of Belonging, enjoyment at university, and degree of motivation to study. Table 3 depicts the significant positive correlations between all three variables. This suggests that students with higher levels of Sense of Belonging also report higher levels of enjoyment and motivation to study, while students with lower levels of Sense of Belonging also report lower levels of enjoyment and motivation to study.

Table 3. Pearson correlations between belonging, motivation and enjoyment.

	Belonging	Do you enjoy studying at university?
Do you enjoy studying at university?	.410** (N = 577)	
How motivated are you to study?	.337** (N = 578)	.497** (N = 592)

** $p < .001$.

Discussion

Belonging and first generation students

The current study found a significant difference in the level of belonging between students whose parents had both completed university and those students where only one parent or no parents attended university (see Figure 2). Therefore, new insight is provided in that first-generation students (i.e. students whose parents did not attend university) and students with only one parent who attended university may have similar levels of belonging. This finding contributes new understanding to current literature as it suggests that the research on first-generation students and their retention may be just as applicable to students who have only one parent who attended university. This is important because first-generation students often report lower levels of belonging than their continuing-generation peers that can impact on their in-class engagement, academic motivation, ultimately contributing to the higher attrition rate for these students (Gillen-O'Neel 2019).

Belonging can influence how much students may feel like an insider or an outsider at university with beliefs about their own capabilities tied to their feelings of belonging (Burke et al. 2016). With this in mind, a sense of belonging has been found to be significant for students' successful transition to university, and ultimately their retention (Maunder 2018; Soria and Stubblefield 2015). This is especially important for first-generation students who have been identified in literature as one of the categories of students most at-risk of dropping out (Meehan and Howells 2019). Indeed, transitioning to higher education can be especially challenging for students whose background does not coincide with the 'dominant narrative of the university experience' (Araujo et al. 2014, 22) and, as such, many of these students lack cultural capital which includes ways of speaking, interacting and behaving that are learned in the home and at school (Thomas 2012). This means for such students that 'coming to university is akin to travelling to a foreign country and not knowing the language and appropriate cultural practices' (Meehan and Howells 2019, 1378). Thus, they may feel they do not fit in, or there may exist a potential lack of fit between their own needs and the demands of the university, and they be more likely to leave university before completing their studies (Tinto 1987; Thomas 2012). Indeed, support and opportunities that foster belonging should be made available to students from such backgrounds to create greater equity in higher education (Burke et al. 2016).

Belonging and university retention

The finding in the current study that 15.40% of students indicated they had considered leaving their incomplete course *often* (see Table 1) echoes research internationally that reports that 20% of students are at risk of not completing their studies in Australia, with up to 50% in the USA, and about a third of all students thinking about withdrawing in the UK (Meehan and Howells 2019). The Theory of Planned Behaviour explains that an overt statement of intention is the strongest prediction of real behaviour (Ajzen 1991). Thus, thinking about leaving university without completing their studies may be a possible predictor of students' intention to drop out of university. Such data is important as it provides an understanding of students who are considering leaving their studies while currently enrolled, rather than gleaned data from attrition questionnaires after students have left higher education.

In the current study, there was no significant difference in sense of belonging between students who indicated they had *never* considered dropping out of university, or had considered it *only once* (see Figure 3). However, students who reported they *sometimes* considered leaving university without completing their course had a significantly lower sense of belonging, and students who reported they *often* considered leaving had a significantly lower sense of belonging than all other groups. While this finding echoes previous research in regard to students with a low sense of belonging being more at risk of dropping out of university (Fourie 2020; Soria and Stubblefield 2015), it provides novel insight into the relationship between students' sense of belonging and the frequency with which they consider leaving their studies. This demonstrates that a student's low sense of belonging may be linked to students' consideration of dropping out more frequently than their peers, which may ultimately lead to higher attrition rates for these students.

Belonging, motivation and enjoyment

The current study established a positive correlation between belonging, motivation and enjoyment (see Table 3). As a novel finding, we will begin by discussing each of these relationships separately with reference to the literature. Firstly, the positive correlation between participants' self-reported levels of motivation and their sense of belonging echoes well-established theory that links motivation and belonging (see Maslow 1943, 1954, 1968) and more recent research has found that a sense of belonging, or connection with school, is related to students' academic motivation (Freeman, Anderman, and Jensen 2010; Gillen-O'Neel 2019; Slaten et al. 2016). It is likely to be a combination of interpersonal and academic factors in students' experiences that foster their sense of belonging and

increase their academic achievement, for example, students' sense of belonging in a class may promote positive motivational beliefs in relation to the class (Freeman, Anderman, and Jensen 2010). With respect to first-generation university students, a sense of belonging may provide them with the motivation to attend tutorials and increase participation (Gillen-O'Neel 2019). By increasing opportunities for students to integrate academically and socially, a lack in motivation may thus be addressed (Haas and Hadgar 2020).

Secondly, in addition to supporting psychological outcomes like motivation, a sense of belonging is also linked with behaviours and emotions that support achievement (Gillen-O'Neel 2019). Academic enjoyment is considered to be an achievement-based emotion that is stimulated when an achievement-based activity is considered to be valuable and controllable (Goetz et al. 2008; Pekrun et al. 2011; Putwain et al. 2018). It has been found to have a positive relationship with student achievement (Goetz et al. 2008) and this positive relationship may interact in a cyclical fashion over time, meaning greater enjoyment may lead to greater achievement and so forth (Putwain et al. 2018).

However, few studies have focussed on emotions such as enjoyment as it is experienced in educational settings (Goetz et al. 2008), and even fewer studies connect academic enjoyment with belonging. This is despite enjoyment being one of the most frequently experienced achievement emotions, along with boredom, and is therefore more likely to affect students' achievement than less frequently experienced emotions (Putwain et al. 2018). Sandstrom and Rawn (2015) reported that students who experience more social interactions at university also reported a higher sense of belonging which was in turn related to greater class enjoyment, suggesting a positive correlation between belonging and academic enjoyment. Furthermore, Sakiz, Pape, and Hoy (2012) found that academic enjoyment was positively related to academic effort and posited that it may potentially be mediated by students' perceived sense of belonging, suggesting that belonging is a mediator between enjoyment and effort. These findings demonstrate the important relationship that exists between enjoyment and belonging and support the current finding that there is a positive connection between students' sense of belonging and students' academic enjoyment.

Finally, previous research has also linked enjoyment and motivation, in that achievement emotions (e.g. enjoyment) are important for students' intrinsic motivation (i.e. interest) and extrinsic motivation (i.e. attaining good grades) and can significantly affect students' learning and outcomes (Pekrun et al. 2011). Pekrun et al. (2011) proposed that motivation is a mediator between enjoyment and achievement and found that enjoyment was positively correlated with intrinsic motivation. Despite connections being drawn between belonging, motivation and enjoyment separately in the literature, to our knowledge, no study has explored the relationship between the three factors in relation to higher education student experience.

Therefore, the positive relationship between belonging, motivation and enjoyment in the current study contributes a novel finding to the existing body of research as it builds on previous research that has established positive links between belonging and motivation, belonging and enjoyment, and enjoyment and motivation separately. Developing an understanding of how these three factors interact will provide further insight into students' levels of belonging, and how this impacts on their enjoyment and motivation at university. It also presents an opportunity to explore how these three factors interact to support student achievement, which existing literature has already shown has a positive relationship with each of these individual factors.

Limitations

A limitation of the present study is that self-reported data was collected at a single point in time. It would be beneficial to distribute the questionnaire at multiple points during the year to observe any changes in students' sense of belonging in relation to their studies: considering leaving university without completing their studies; the sense of belonging of first-generation students; and motivation and enjoyment. For example, results in relation to first generation students' sense of belonging may change as the year progresses and they develop friendships, better understand the university

culture and develop a connection with their institution. It is acknowledged that the present study collected data from students who stayed at university despite considering leaving university without completing their course. It can be assumed that students who do attrite may have different characteristics from those who stayed, especially in terms of their sense of belonging. Additionally, self-report measures rely on participants' self-evaluation of emotions and are therefore prone to subjective biases. However, self-report measures of emotion are, at present, deemed to be the most reliable, valid, and economic assessment tools available (Goetz et al. 2008). Finally, single questions were used to measure participants' enjoyment and motivation. Including established scales to measure enjoyment and motivation in future research would allow further exploration of the findings presented in this paper.

Future research

The current study has contributed new insights to established understandings of students' sense of belonging through novel findings that would benefit from further exploration. Future research may explore the relationship between the frequency with which students consider leaving higher education without completing their course and their sense of belonging to establish if this relationship be connected to student attrition. Additionally, an exploration of the similarities in belonging between first-generation students and students who have had one parent attend university would provide further insight into how universities can provide effectively for these students' needs. An additional valuable avenue for future research would be the exploration of the interconnected relationship between belonging, motivation and enjoyment, the directionality of this relationship, and how these factors combine to influence student achievement.

Conclusion

University students' sense of belonging is important as when students feel connected to their institution and university community they are more likely to remain at university. This is especially true for first year students who have the highest attrition rates in universities around the world. For first-generation students, a strong sense of belonging in their university community can support them to attend, participate and achieve as they may lack the cultural capital of their on-going generation peers. Additionally, belonging supports students' academic motivation at university which can promote positive academic behaviours and improve academic achievement. Finally, belonging is associated with students' self-reported enjoyment in relation to their studies. Taken together, university students' sense of belonging is significant and of high importance to higher education institutions as it increases students' academic motivation and improves student retention.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Megan Louise Pedler is currently completing a PhD in the Faculty of Education with a focus on teacher pedagogy and student engagement. She is also exploring factors that increase student retention at university with a specific interest in students' sense of belonging and how this relates to student outcomes. Megan is an experienced educator and has taught in universities, secondary schools, and as a specialist teacher in primary schools, both in Australia and abroad. https://researchportal.scu.edu.au/esploro/profile/overview?institution=61SCU_INST.

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interest in Environmental Psychology. This research has largely focussed on the influence of individual differences, such as avoidance tendencies and a disposition for critical thinking in pro-environmental behaviour. https://researchportal.scu.edu.au/esploro/profile/royce_willis/overview?institution=61SCU_INST.

Dr. Johanna Elizabeth Nieuwoudt is an experienced lecturer in SCU College at Southern Cross University, where she helps students from diverse backgrounds and experiences gain skills and confidence to be successful in their future university studies. She specialises in the curriculum design and delivery of higher education pathway courses for students in high school (Year 12), pre-award programmes, and diplomas. Johanna's primary research interests are in the identification of factors that may contribute to student success. Johanna is an editor of the *Student Engagement in Higher Education Journal*, an international peer-reviewed journal publishing contributions dealing with student engagement in higher education from a disciplinary or multi-disciplinary perspective. https://researchportal.scu.edu.au/esploro/profile/johanna_nieuwoudt/overview?institution=61SCU_INST.

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Availability of data and material

Available to other researchers on request.

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