

How Do Mental Health Literacy, Onboarding Experiences & First Generation Status Impact First Year Students' Success?

Anay Roberts, Rukudzo Munyeza, Jonathan Li, Nicoleta Maynard and James Salamy

Monash University, Victoria, Australia

Corresponding Author Email: anay.roberts@monash.edu

CONTEXT

Academic success and a sense of belonging are key determinants for completing tertiary education (Cromley et al, 2022; Doran et al, 2022). Many students face unique challenges that can affect these determinants, such as mental health issues, the quality of their initial integration or onboarding experiences at the university, and the particular hurdles faced by first generation students (first person in the immediate family to attend university).

GOAL

The study aims to explore how undergraduate students' perception of academic success and sense of belonging are impacted by three **key factors**: (i) Mental Health Literacy (MHL), (ii) engagement with onboarding experiences, and (iii) being a first generation student. The impact factors will be analysed independently and jointly to discover any emerging intersectional trends.

METHODOLOGY/METHODS

An exploratory mixed methods framework will be utilised. Standardised questionnaires assessing the three key factors will be delivered to first year engineering students at Monash University, before and after results release. From these questionnaires, the impacts would be analysed to determine their link with students' perceived sense of academic success and belonging.

Focus groups will be conducted to further explore themes arising from the questionnaires, with participants recruited from students who have completed the questionnaires. Themes identified will be used to propose interventions for future cohorts to address the impacts of these key factors.

ANTICIPATED OUTCOMES

This paper will report on the results from the first questionnaire. It is anticipated that MHL, onboarding experiences, and being a first generation student will correlate with both perceived academic success and a sense of belonging. This analysis aims to reveal intersectionality between the three key factors and the facets of academic success and belonging.

SUMMARY

This study highlights the need for University programs to address the diverse needs of current and future students. As a result of this study, we aim to propose interventions designed to support universities to enhance their onboarding processes, MHL initiatives and support systems for first generation students. These supports should aim to enhance engineering students' academic success and belonging, and improve retention rates over the course of their studies.

KEYWORDS

Mental Health Literacy, Onboarding, First Generation, Academic Success, First-year Engineering

Introduction

The success of first-year Engineering students is crucial for educational institutions, policymakers, and future employers. This research examines the impact of mental health literacy, first-generation status, and onboarding experiences on the success of first-year engineering students. By analysing these factors, we aim to understand their correlation with academic achievement and sense of belonging. The findings will inform frameworks for universities to enhance student success, with a focus on first-year engineering students at Monash University in Australia. This study addresses a critical gap in understanding the relative impact of these three factors on both academic success and sense of belonging, while exploring how to make MHL supports more accessible and effective for first-year Engineering students who need them most.

Key Terminology

We focus on three key factors impacting First Year Students:

Mental Health Literacy (MHL): Our definition of mental health encompasses emotional, psychological, and social well-being, influencing how individuals think, feel, and act. The literature highlights that MHL, which includes understanding mental health issues and knowing how to seek help, is linked to reduced stigma, increased help-seeking behaviour, and higher levels of engagement. Dick (2022) suggests that enhancing MHL could lead to better student engagement, as well as face-to-face interactions with peers and mentors. Improved MHL is associated with a stronger sense of belonging and greater academic success.

Onboarding Process: The onboarding experience definition used in our research aligns with Ziegenfus' (2021) definition: from course acceptance until the completion of the first year at university. Ziegenfus found that during this critical period, students may withdraw, no-show, transfer, or face attendance violations.

First Generation Students: In this study, first-generation students are defined as those who are also the first members of their immediate family to attend university (Inkelas et al., 2006).

By addressing MHL, first-generation challenges, and optimising the onboarding process, universities can foster an environment conducive to achievement and belonging.

Research Objectives

How Do Mental Health Literacy, Onboarding Experiences & First Generation Status Impact First Year Students' Success?

This project aims to investigate the influence of MHL, onboarding experiences and first-generation student status on the success of first-year students. The key measurements for success are *perceived academic satisfaction* and *perceived sense of belonging*. Additionally, it seeks to provide recommendations for the University to address these challenges and enhance student success. The three chosen factors were a result of them being the most prevalent, in the initial research phase, for negative correlations with student retention rates (Adbulghaffar et al., 2022); additionally, the two primary authors are currently undertaking engineering at Monash University and found those factors to have large impacts on their individual and joint successes and sense of belonging.

A quantitative questionnaire will assess the impact of MHL by measuring students' knowledge and awareness before and after semester one results, while also capturing first-generation status. Quantitative data will identify correlations between onboarding experiences and student success, focusing on trends in perceptions and outcomes. Focus groups will further explore the challenges faced by first-generation students and their MHL and onboarding experiences. Based on the findings, a framework of suggestions will be developed for the university, including program adjustments and new initiatives to enhance first-year student success in MHL, onboarding, and support for first-generation students.

Literature Review

The recent Australian University Accord (Department of Education, 2024) emphasises the goal of 80% tertiary education attainment among the working-age population by 2050. Understanding First Year engineering students' perspectives can provide guidance on how to better support these young Australians in attaining a bachelor's degree. This aligns with the goal of increasing participation in university study to 55% by 2050, set by the Accord.

At Monash, over half of the first-year engineering students experienced a fear of failure (Abdulghaffar et al., 2022), highlighting the importance of exploring student mindset and mental health awareness. Gulliver et al. (2022) link mental health literacy to student engagement, emphasising its significance. Dick (2022) underscores the positive effect of face-to-face interactions on engagement. Analysing first-year students' onboarding experiences and MHL can further validate these connections and inform improved support strategies.

Mental Health Literacy

MHL significantly influences university students' engagement and success. Gulliver et al. (2022) identified that stigma around mental health negatively affects students' ability to assimilate with their peers and their willingness to seek help, while higher MHL correlates with help-seeking behavior. Similarly, Abdulghaffar et al. (2023) found that promoting a growth mindset that embraces failure as a learning opportunity and encourages help seeking would increase students' success. The findings of MHL improving abilities to assimilate and succeed are also supported by Dick (2022), who emphasised that social interactions play a crucial role, and students who maintain connections with friends and family report higher comfort levels. Mental health impacts were also found to have a crossover with another key factor being investigated in this paper, onboarding. Gulliver et al. (2022) found that engagement with university life and the presence of high psychological distress outside of university heavily impacts students' studies. However, even when the results of onboarding were positive, mental health was still found to be negatively impacted. Lu (2023) found that many of the challenges faced when navigating a new campus were quickly overcome by first year students; yet a substantial proportion of the students still experienced feelings of depression and overwhelming stress. Abdulghaffar et al. (2023) revealed a reason for this stress was that many first-year students were not satisfied with a passing grade, and felt stress when they did not meet their personal academic goals. Another reason for this overwhelming stress was that, on top of academic pursuits, students often had to juggle external work commitments and a social life, which also resulted in reduced levels of satisfaction with their lives (Applegate & Daly, 2006). To support students that are impacted by their mental health, universities offer a large range of support. However, although students are provided with numerous resources to help them, they still feel overwhelmed, due to a lack of understanding in how to use these resources (Husman & Reynolds, 2018). This gap of students being offered many support programs, but still being impacted by their mental health and MHL, suggests a need for further research into how MHL impacts student success and sense of belonging. It also highlights a need for research into how to effectively provide the resources to students to improve their MHL, in a way that is accessible and less overwhelming.

First-Generation Status

The impacts of being a first generation student on academic success and belonging are important factors to investigate to ensure a more equitable tertiary experience (Department of Education, 2024). Existing research demonstrates that university enrollment and retention rates vary significantly based on parents' educational level (Ishitani, 2003). Additionally, first-generation students often experience difficulties adapting to the academic and social demands of university due to a lack of familial experience with higher education (Engle & Tinto, 2008). Pascarella et al. (2004) highlight that these students face additional hurdles in adjusting to new environments, impacting their academic success and sense of belonging. Some hurdles include having to break family tradition, and the lack of familial tertiary education resulting in the necessity for students to self adjust to the new social and academic cultures (Pascarella et al. 2004). It is also found that these students still have negative impacts on their success, even after controlling factors such as:

“family income, educational expectations, academic preparation, and support from parents and educators in planning and preparing for [university]” (Choy, 2001); this highlights that the disadvantages are complex in nature, therefore qualitative analysis is needed to understand the root of the disadvantages. However, engagement strategies, such as on-campus living and participation in campus activities, have been shown to enhance success for first-generation students (Inkelas et al., 2006). Gulliver et al. (2022) also noted that seeking help and moving away from home can have positive effects on academic performance. Despite these findings, gaps remain in understanding how developmental stages and institutional support can mitigate the disadvantages faced by these students.

Onboarding

Effective onboarding is crucial for student success and retention. Ziegenfus (2021) indicated that the transition to university is a critical period impacting first-year student success. In this period, students have to adapt their expectations of university to align with reality. Dingle et al. (2022) found that there is a relationship between students' met and unmet expectations and their turnover, and that a large proportion of students perceived that less than half of their expectations of university life were met. The perceptions that students have around failure are formed prior to the commencement of the degree, and these academic expectations from high school leave first-year students unprepared for their university courses (Budny and Tartt, 2009). Studies suggest that comprehensive onboarding, including clear guidance and support resources, can improve students' adjustment to university life and potentially reduce attrition rates (Husman & Reynolds, 2018). Dingle et al. (2022) found that students are finding increasing difficulties in the social transition from high school to university, and are lacking a sense of belonging. The difficulties centre around themes of having fun, meeting new and different people, and being mentally stimulated by new experiences. Dingle et al. (2022) suggested that sharing intellectual controls with students would encourage them to enhance their independent learning skills. However, Abdulghaffar et al. (2023) found that the freedom to manage one's own time would benefit independent learners, but would leave others behind, with the dissonance of their misconceptions of the degree leaving them demotivated. Future research should focus on optimising onboarding processes to enhance student engagement and success, and ensure that the transition between expectations and reality is effectively managed.

Methods and Methodology

This research employs an explanatory mixed-methods approach to examine the experiences of first-year engineering students at Monash University. This approach integrates both qualitative and quantitative data collection to provide a nuanced understanding of the factors influencing student success (Shorten & Smith, 2017). By combining numerical data with rich, descriptive insights, the study aims to uncover complex relationships between students' perceptions of success and three critical factors: onboarding procedures, being a first-generation university student, and MHL.

The mixed-methods approach allows for a comprehensive exploration of how these factors affect student performance and success. To gather quantitative data, two questionnaires will be distributed to first-year engineering students. The first was administered shortly after the mid-semester break to capture students' initial perceptions of these key factors and their impact on academic performance and sense of belonging. The second, distributed after the release of end-of-semester results, gathered reflective feedback on students' overall semester experience and satisfaction with their academic outcomes; the second questionnaire was identical to the first, with some additional questions. The qualitative portion of this study, consisting of focus groups, is ongoing, and is not presented in this paper. Blank responses were excluded from the results as the questionnaire allowed optional responses.

Data Collection

Questionnaire One (Q1)

Q1 examined students' perceptions of academic success and belonging, focusing on mental health, onboarding experiences, and first-generation status. Data was collected in their first semester, before their initial results were released. The questionnaire used closed-ended questions for demographics and a 5-point Likert scale to rate agreement with various prompts (Table 1).

Table 1: Questions present in Q1 for each of the three key areas

Onboarding	First Generation Status	Mental Health Literacy
Students' readiness for studies	Impacts from university settlement	Knowledge of mental health supports at Monash
Onboarding process satisfaction	Impacts on academic goals	Effectiveness of Monash mental health supports
Adjustment to University expectations	Monash supports for a first generation student	

Questionnaire Two (Q2)

The second questionnaire, released before the semester one results, included the same questions as the first, with additional questions added (Table 2).

Table 2: Additional questions present in Q2 for each of the three key areas

Onboarding	First Generation Status	Mental Health Literacy
Meeting the University expectations	Perception of Monash's awareness of their first-generation status	Help-seeking behaviors used when facing mental health challenges
Involvement in university activities outside of class hours	Participation in university-provided orientation events	Emotional well-being throughout the semester

Finally, Students rated on a three-point scale how mental health, first-generation status, and onboarding affected their academic success and sense of belonging (six questions).

Findings and Discussion

Q1 received responses from 131 Monash engineering students, 20 of whom identified as first-generation. The following key findings emerged from the questionnaire:

- First generation students perceive a stronger negative impact on their academic success than their sense of belonging
- Mental health was perceived to have a negative impact on both success and belonging, with a larger impact on academic performance
- Although students have access to free mental health resources, majority had not tried to use any, despite reporting mental health to negatively impact them
- Onboarding had a positive impact on both academic performance and sense of belonging, with a larger impact on sense of belonging

Q2, conducted at the end of the semester, received responses from 112 Monash engineering students, 16 of whom identified as first-generation. The second questionnaire asked students to reflect on their semester, and found the following results:

- 83.7% of students reported increasing feelings of stress, while 53.1% reported anxiety.
- 61.2% of students said they understood the university's expectations of them.
- 78.6% of students were involved in the Monash community outside of classes
- When/if their mental health was impacted:
 - 51.5% of students said that they would look for free resources from Monash
 - 81.2% of students said that they would do an activity that helped them alleviate it

In Q1 students were asked to provide a unique word that they would save for future reference, when asked for that word in Q2 there were 20 identical matches.

First Generation

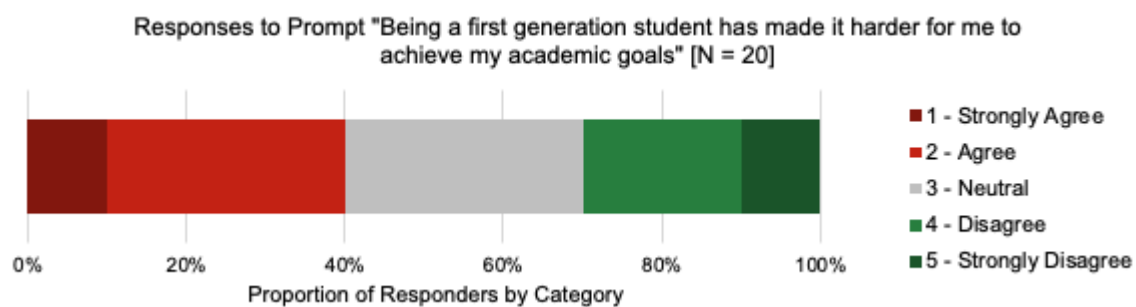


Figure 1: First generation student perception of academic goals (Q1)

40% of first generation students agreed or strongly agreed that being a first generation student made it harder for them to achieve their academic goals, with 30% disagreeing or strongly disagreeing (Figure 1). This indicates that being a first generation student is more strongly correlated with a perception of poor academic success. This finding aligns with those of Pascarella et al. (2004), Engle & Tinto (2008), and Choy (2001), as they found first generation status to negatively impact academic success. Both Engle & Tinto (2008) and Pascarella et al. (2004) attribute this disadvantage to the need to break family tradition and the lack of a familial university background, which required self-adjustment to new social and academic environments. Choy (2001) had found that the cause of these negative impacts were nuanced, as they were still present even after controlling for factors such as "family income, educational expectations, academic preparation, and support from parents and educators in planning and preparing for [university]". The cause of this disadvantage will be further explored through the qualitative focus groups.

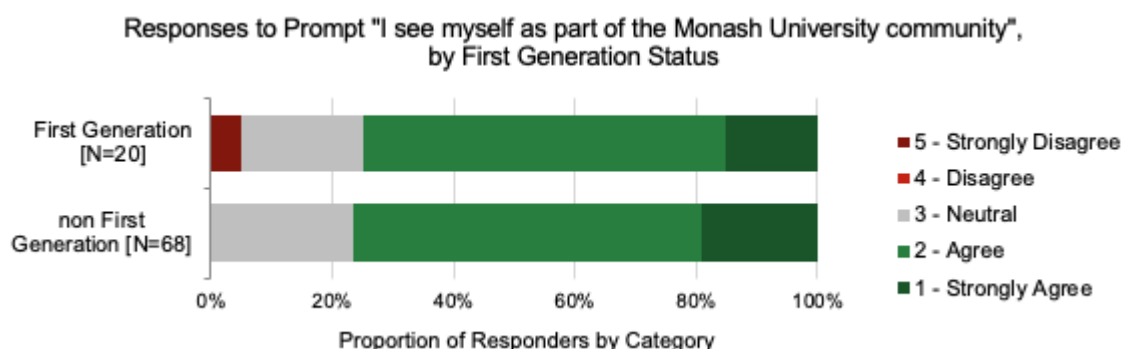


Figure 2: Comparison of First Generation students and non-first generation students on their perceived academic performance and sense of belonging (Q1)

15% of first generation students strongly agreed to seeing themselves as part of the Monash community, with the remaining students having a higher percentage at 19% (Figure 2). Although the non-first generation students had a higher self-rating of their sense of belonging, the ratings

of the first-generation students were relatively similar. The reasoning for the cohort perceiving their academic performance to be more significantly impacted than their sense of belonging will also be further analysed qualitatively in the future work of this project.

Mental Health

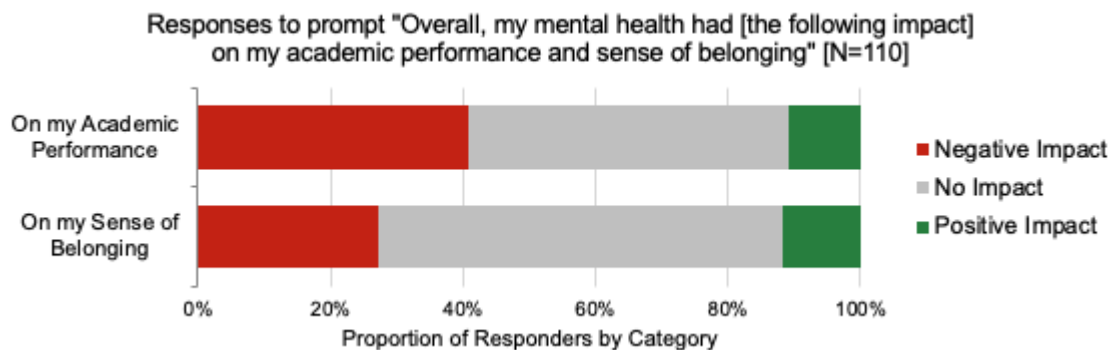


Figure 3: Perceived impact of Mental Health (Q2)

Mental health was perceived to have a larger negative impact on academic performance (41%) compared to sense of belonging (27%), as shown in Figure 3. Additionally, 77.5% of students reported not trying to seek mental health support through Monash. Husman & Reynolds (2018) found that students were provided with numerous resources, but lacked an understanding of how to utilise them. This study aligns strongly with that conclusion, finding that although the cohort found their mental health to have a strong negative impact, they were still largely not inclined to use the university's resources. Although 83.7% reported increasing feelings of stress and 53.1% reported increasing feelings of anxiety, 61.2% reported an increased understanding of the University's expectations of them (Questionnaire Two). These findings aligned closely with the literature, as Lu (2023) found students would quickly overcome the challenges of adjusting to university life, but would experience feelings of depression and overwhelming stress. When asked what students would do in the event of their mental health being impacted, 51.5% would look for the free resources offered by Monash, but 81.2% would do activities to alleviate the impacts (Q2). The focus groups will investigate why students would opt for doing a hobby over using the numerous free mental health services offered by the tertiary institution.

5.3 Onboarding

The extent to which students perceived their expectations of university to be met followed closely to a bell curve, with the average response being neutral (2.93), as shown in Figure 4. Additionally, students reported that the onboarding experience had a mostly positive and neutral impact on both their academic success and sense of belonging. The impact was 54% positive for sense of belonging, but only 49% for academic performance (Figure 5). This did not align with the findings of Dingle et al. (2022), in which it was found that there were increasing difficulties with the social transition from high school to university and a lack of a sense of belonging.

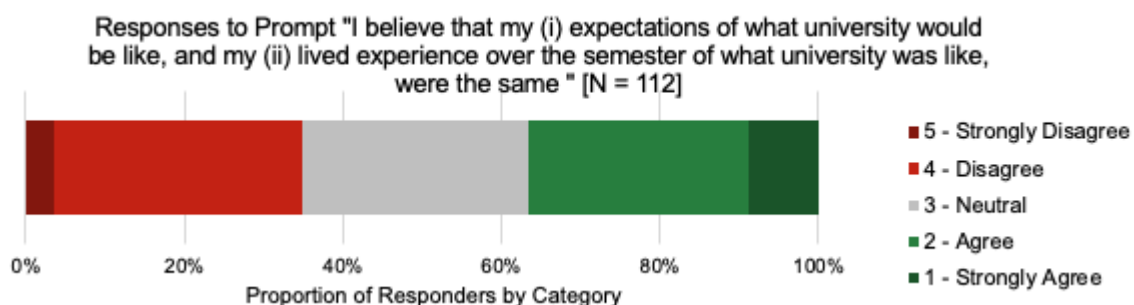


Figure 4: Students' perception of expectations being met (Q2)

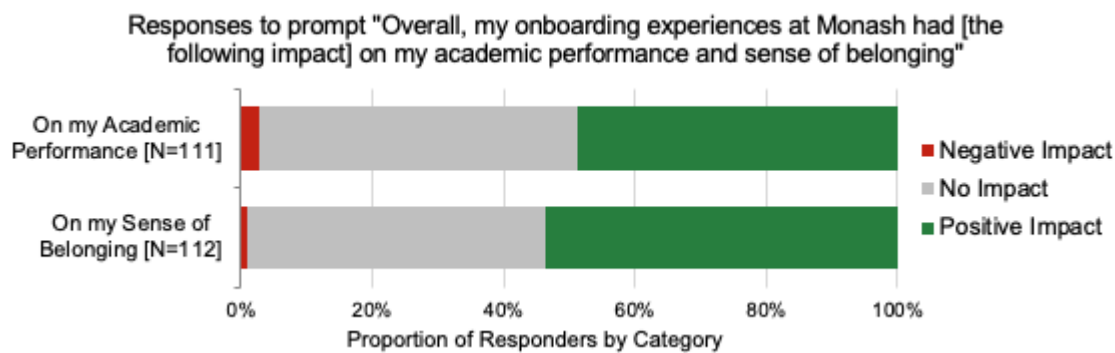


Figure 5: Students perceived impact of onboarding (Q2)

However, Dingle et al. (2022) believed that the difficulties centered around the need for having fun, meeting new people, and being mentally stimulated by new experiences. This differentiation could be due to the large proportion of Monash students participating in University life, thus agreeing with the findings of Dingle et al. (2022); as 78.6% of the students reported being involved in the Monash community outside of classes, and 99% reported being involved in at least one onboarding event (Q2).

Recommendations and Limitations

The study faces several limitations that could impact the reliability and generalisability of its findings. Such limitations include, but are not limited to, the demographic consisting of only first year students at Monash University, and the data being self-reported, thus it is only based on students' perceptions. Anonymity was employed to mitigate the impacts of self-reported bias. This allows students to be more honest, improving the accuracy of the data gathered. Another limitation was that the questionnaire allowed students to pick both yes and no to some questions, in these instances the data was excluded from the results. Additionally, students who stated that they were not first generation students were able to answer questions about being a first generation student. If it was ambiguous if a student was a first generation student, they were included, as they could be one.

The main findings from this research indicate that first generation students reported lower satisfaction with their academic performance, students' mental health negatively impacted performance, students were not utilising free mental health resources offered, and onboarding had a stronger positive impact on sense of belonging than on academic success. From these preliminary findings, it is suggested to find out why students are not utilising the mental health supports and how to make them more accessible. It is also important to target the onboarding process to also prepare students more for the academic transition from high school to university and to create more effective support to alleviate the negative impacts of being a first generation student on academic performance. Overall, this research strongly aligns with the current goals of the Australian Universities accord, with a significant focus on equity. It is anticipated that the qualitative focus groups will further validate and improve the reliability of these reported phenomena, and provide insights into the causation of these highlighted trends.

References

- Abdulghaffar, S., Phoon, M., Poon, D., Tan, L., Li, J., Maynard, N., & Salamy, J. (2023). "P's Get Degrees": Exploring First-Year Engineering Students' Perceptions and Experiences of Failure. In 2023 34th Australasian Association for Engineering Education Conference. Gold Coast, QLD, AUS.
- Applegate, C. & Daly, A. (2006) The Impact of Paid Work on the Academic Performance of Students: A Case Study from the University of Canberra. *Australian Journal of Education*, 50 (2).
<https://doi.org/10.1177/000494410605000205>

- Budny, D., & Tartt, J. (2009). *Do engineering students fail because they don't know how to fail?*. 2009 39th IEEE Frontiers in Education Conference (pp. 1-7), San Antonio, TX, USA. <https://doi.org/10.1109/FIE.2009.5350555>
- Choy, S. (2001). Students whose parents did not go to college: Postsecondary access, persistence, and attainment. In *The Condition of Education* (pp. xviii-xliii) . National Center for Education Statistics.
- Cromley, J., Mirabelli, J., & Jensen, K. (2022). *RFE: Understanding graduate engineering student well-being for prediction of retention: Year 1* [Paper presentation]. 2022 ASEE Annual Conference & Exposition, Minneapolis, Minnesota, USA. <https://doi.org/10.18260/1-2--42020>
- Department of Education. (2024). Australian Universities Accord. O'Kane, M. Australian Universities Accord. <https://www.education.gov.au/australian-universities-accord/resources/final-report>
- Dick, B. (2022). *Long-term impact of COVID-19 on the first-year engineering experience at a mid-sized teaching focused university*. 2022 ASEE Annual Conference & Exposition, Minneapolis, Minnesota, USA. <https://doi.org/10.25316/IR-17930>
- Dingle, G., Han, R., & Carlyle, M. (2022). Loneliness, Belonging, and Mental Health in Australian University Students Pre- and Post-COVID-19. *Behaviour Change*, 39(3), 146-156. <https://doi.org/10.1017/bec.2022.6>
- Doran, K., & Swenson, J. (2022). *'Do I Belong Here?': Persistence and Retention Implications of Engineering Belongingness and Identity in Academically At-Risk Populations*. 2022 IEEE Frontiers in Education (FIE), Uppsala Congress Centre, Uppsala, Sweden. <https://doi.org/10.1109/FIE56618.2022.9962536>
- Engle, J., & Tinto, V. (2008). *Moving Beyond Access: College Success for Low-Income, First-Generation Students*. Pell Institute for the Study of Opportunity in Higher Education. <https://eric.ed.gov/?id=ED504448>
- Gulliver, A., Wysoke, T., Calear, A., & Farrer, L. (2022). Factors Associated with Engagement in University Life, and Help Seeking Attitudes and Behaviour in First Year Undergraduate Students. *Int J Environ Res Public Health*, 20(1). <https://doi.org/10.3390/ijerph20010120>.
- Husman, J., & Reynolds, R. (2018). Enhancing student support services: The importance of resource utilization in adjusting to university life. *Higher Education Research & Development*, 37(5), 989-1003. <https://doi.org/10.3390/ijerph20010120>
- Inkelas, K. K., Daver, Z., Vogt, K., & Leonard, J. B. (2006, August 12). Living–Learning Programs and First-Generation College Students' Academic and Social Transition to College. *Research in Higher Education*, 48, 403-434. <https://doi.org/10.1007/s11162-006-9031-6>
- Ishitani, T. (2003). A Longitudinal Approach to Assessing Attrition Behavior Among First-Generation Students: Time-Varying Effects of Pre-College Characteristics. *Research in Higher Education*, 44, 433-449. <https://doi.org/10.1023/A:1024284932709>
- Lu, M. (2023). *Motivational Factors for College Success: A Focus on First-Generation and Immigrant Students*. The Learning Ideas Conference, New York, USA. https://doi.org/10.1007/978-3-031-41637-8_27
- Pascarella, E., Pierson, C., Wolniak, C., & Terenzini, G. (2004). First-Generation College Students: Additional Evidence on College Experiences and Outcomes. *The Journal of Higher Education*, 75(3), 249-284. <https://doi.org/10.1080/00221546.2004.11772256>
- Shorten, A., & Smith, J. (2017). Mixed methods research: Expanding the evidence base. *Evidence Based Nursing*, 20(3), 74–75. <https://doi.org/10.1136/eb-2017-102699>
- Ziegenfus, J. (2021). *The Relationship Between Onboarding and Student Persistence in Urban Precollegiate Organizations*. [PhD Thesis, Vanderbilt University] Heard Libraries. <https://doi.org/1803/16805>

Acknowledgments

Generative AI was used to help synthesise the writing presented (Open AI ChatGPT 4o mini). The AI did not add any new ideas, and all of its outputs were then further adapted by the authors.

Copyright statement

Copyright © 2024 Anay Roberts, Rukudzo Munyeza, Jonathan Li, Nicoleta Maynard and James Salamy: The authors assign to the Australasian Association for Engineering Education (AAEE) and educational non-profit institutions a non-exclusive licence to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The authors also grant a non-exclusive licence to AAEE to publish this document in full on the World Wide Web (prime sites and mirrors), on Memory Sticks, and in printed form within the AAEE 2024 proceedings. Any other usage is prohibited without the express permission of the authors.