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Unlocking Potential: The Value of Extended Induction Programs for Underrepresented Students in Higher Education

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Abstract

Over the past decade, universities have invested substantial resources in enhancing equity in higher education. First-year extended induction programs are the earliest opportunity for universities to level the playing field with resources and support across students from diverse backgrounds. Research suggests these programs generally help students thrive, but limited research investigates whether they create differential impacts for students from underrepresented groups. This study takes up this challenge drawing on attendance data for a first-year extended induction program and mapping it to student feelings of belonging, engagement, and academic self-confidence. We find that students from historically underrepresented backgrounds accrue the greatest benefit from attendance. However, there are differences across measures of belonging, engagement, and academic self-confidence that require further investigation. In general, the results suggest that first-year induction programs are an essential component of universities' efforts to improve equity among students.

Keywords: Access and participation; diversity; higher education; transition pedagogy; student outcomes; student retention.

Introduction

Extended induction programs (also known as transition programs) in higher education are a suite of interventions that go beyond the typical student orientation and help ease new students into their new environment by offering opportunities for connection, skill building, and development. Universities might construct extended induction programming to allow students to meet, celebrate their diversity, engage with lecturers outside of the classroom, and to find out more about wrap around support services available to students (Meehan & Howells, 2019; Palmer et al., 2009; Tinto, 1975).

Such programs are widely considered essential to future academic persistence, satisfaction, and attainment (Cook et al., 2006; Harvey et al., 2006; Nelson et al., 2011; Palmer et al., 2009; Tinto, 1975). The shift from students' comfort zone into life as a university student can be disruptive (Mulaudzi, 2023; Fisher & Hood, 1987) and can lead to students experiencing psychological distress, anxiety, depression, and isolation (Thompson et al., 2021;

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Young et al., 2020; Fisher & Hood, 1987; Hicks & Heastie, 2008; Palmer, O'Kane & Owens, 2009; Stanley et al, 2009). In addition, younger students may be navigating independence and new teaching practices that may be very different from what they are used to while mature students may have different responsibilities that create other complexities when engaging in higher education (Christie et al., 2004; Elander et al., 2021). These factors make supportive programming around new students essential for their success.

Students from historically underrepresented groups such as first-generation students, students from low-income backgrounds, and minority ethnic students in primarily White institutions may face even greater challenges when integrating into university life (Araújo et al., 2014; Garriott, 2020; MacDonnell & Bisel, 2021). Indeed, minority ethnic students report feeling uncertain about their belonging in social institutions like university (Strayhorn, 2008a, 2008b; Walton & Cohen, 2011) and first-generation students may also face unfamiliar environments (Santelies et al., 2026) and need tailored support to help them adjust. Extended induction programs, in concert with other academic, social, and pastoral support, are critical to strengthening belonging and reducing inequalities between students (Thomas, 2012).

In this study, we describe an institution wide extended induction program at a large and diverse university on the South Coast of England in the autumn of 2024. We examined the relationship between new university students' attendance of an extended induction program and their subsequent feelings of belonging, academic self-confidence, and engagement in the first term compared to students who did not attend. We then conducted subgroup analyses focusing on historically underrepresented student groups including minority ethnic students and students from deprived areas. This subgroup analysis allowed for the exploration of variation in impact across different subsets of students. Finally, we also outlined implementation hurdles, data quality issues, and the complexities of delivering higher education that complicate this otherwise positive picture.

Literature Review

The growth in higher education study in the United Kingdom and Australia has been accompanied by several decades of an increasingly diverse student body (DiMiceli, 2023; Thomas & Tight, 2011). In the United Kingdom, students from a range of ethnic, socio-economic, and cultural backgrounds have enrolled in higher education in the last decade in ways that do not always mirror the larger population (DiMiceli, 2023). In Australia, the number of students in higher education tripled between 1989 and 2016 (Australian Government Department of Education and Training, 2016). Furthermore, historically underrepresented students from lower socioeconomic backgrounds, Indigenous Australians, and students from more remote regional areas, increasingly participate in higher education (Australian Government Department of Education and Training, 2016; Naylor et al., 2013)

The expansion of access to higher education and increasing diversity of students has underscored the importance of ensuring students achieve equally regardless of their diverse backgrounds (Bolton & Lewis, 2023; Hughes & Small, 2015). This work is needed as differential outcomes between students continue. Research suggests that academic self-confidence and success is often lower for students from ethnic minority backgrounds (Madriaga, 2022; Botticello & West, 2022; İlhan İlter, 2026). Students with a disability also face barriers to engaging fully in higher education including infrastructure issues as well as incompatible teaching methods and poor institutional management (Fernandez-Batanero et al., 2022). Other evidence suggests there are difficulties in access to and success in higher education among men (Bolton & Lewis, 2023). Moreover, students at the intersection of identities that include marginalised and historically underrepresented groups face even greater risk (Stevenson et al., 2019).

Extended induction programs have the capacity to positively impact students in their critical first year by providing educational and social capital to students from historically underrepresented groups (Meehan & Howells, 2018). Building students' sense of belonging is critical as feelings of belonging are an antidote to attrition (O'Keeffe, 2013; Crawford et al., 2023). A recent study found that predictors of students' sense of belonging are rooted in their ability to connect with others outside of class and receive support from the university to settle into their new life, suggesting that extended induction programs providing such opportunities could enhance student belonging (Crawford et al., 2023).

However, less is known about whether such programs benefit some groups in different ways. The spectrum of historically excluded groups is large, and students from low-income backgrounds may require very different supports than students with disabilities. Here we focus on five groups: students from low-income backgrounds, minority ethnic students, male students, students with disabilities, and mature students (over 21). Existing research

finds that these groups are particularly likely to face barriers to success and belonging in higher education (Harris, 2018; Hillman & Robinson, 2016), to come in with lower academic self-confidence (İlhan İlter, 2026) and are less likely to engage academically without adequate support (Kahu & Nelson, 2019; Heffernan, 2024).

Developing evidence around how extended induction programs impact students from different subgroups can help institutions direct investment in wraparound provision to the students who stand to benefit most.

This Study

This study examines the relationship between extended induction programs and three measures correlated with student success: belonging, academic self-confidence, and engagement. The study was located at a large comprehensive university in the South of England with a focus on students from marginalised and historically underrepresented groups. The university teaches a wide range of subjects using only a face-to-face mode of delivery. This study focuses on students' experiences of an extended induction program which has been developed to provide a comprehensive induction for all level 4 (first year) and level 0 (Integrated Foundation Year) students. The program leverages a multifaceted engagement initiative that involved the entire campus including academic staff, professional staff, and educational support services (Naylor & Marrington, 2025; Kift, 2015; Kift & Nelson, 2005; Gale & Parker, 2011). The core components of the program reflect established tenants of transition pedagogies (Kift, 2009; Kift et al., 2010):

1. **Transition:** The program provides support for the transition from college into university life by talking students through academic differences as well as emotional components of university life.
2. **Diversity:** Recognising and mediating the diverse strengths and challenges of student cohorts to create inclusive learning environments.
3. **Design:** Ensuring coherence and clarity in the sequencing of knowledge, skills, and values across the curriculum to scaffold student learning.
4. **Engagement:** Promoting belonging and active participation through peer and staff interaction, as well as real-world connections to disciplines.
5. **Assessment:** Using inclusive and formative assessments to build student confidence, provide actionable feedback, and prepare students for disciplinary expectations.
6. **Evaluation and Monitoring:** Embedding practices for tracking student progress, identifying at-risk students, and fostering students' capacity for self-reflection and regulation.

The extended induction takes place over the first four weeks of the teaching calendar and builds on the information delivered in Welcome Week. The sessions cover academic skills, personal safety and security, wellbeing, and the benefits of engaging in extracurricular activities which include part time work, mentoring, volunteering and engagement with the students' union. All the sessions are supported by the professional service teams and the students' Course Leader to provide an additional non-academic touch point, with the intention that the sessions provide students with the skills, information, and support they need to succeed, removing any unintended consequences of assuming students' prior knowledge.

Methodology

Based on existing institutional research conducted in 2019 (MacDonnell & Bisel, 2021) and existing research into transition and induction pedagogies, we hypothesised that an institution wide extended induction program would provide greater benefit to students from historically underrepresented backgrounds. This hypothesis draws on the research outlined above which indicates that belonging is critical to student success and that students from historically underrepresented backgrounds are less likely to feel an inherent sense of belonging in higher education than their peers from more traditionally represented backgrounds. Thus, our central research questions are twofold:

> **RQ1:** Does attending an extended induction program lead to greater feelings of belonging, engagement, and academic self-confidence?
>
> **RQ2:** Does attending an extended induction program produce a greater benefit for students from underrepresented backgrounds than their peers?

To answer our research questions, we combined two secondary datasets collected routinely by the university: student attendance and survey. We describe each of these datasets in turn.

Measures of Attendance

The first dataset draws directly from attendance records for the extended induction program between September and October 2024. These data are collected through a university wide attendance system which captures student attendance through electronic 'swipe' devices situated outside larger teaching spaces or an online register taken by staff in the smaller rooms. There are cases where card readers fail at the point of entry but in these cases, students should be able to request an update to their attendance records if they believe they are incorrect.

Measures of Belonging, Engagement, and Self Confidence

As part of a broader program of evaluation and student experience work at the university, students are invited to take part in a survey each November. This survey leverages Yorke's (2016) survey of belonging, engagement, and academic confidence. Yorke's survey was developed after considering a range of instruments, including Goodenow's (1993) school belongingness survey, first-year experience surveys by James et al. (2010) and Yorke and Logden (2007), the Your First College Year survey (Ruiz et al, 2010), the National Survey of Student Engagement (NSSE) and surveys of students' experiences of their whole programs such as the Course Experience Questionnaire in Australia and the National Student Survey in the UK. The items developed were Likert type, inviting responses on a five-point scale ranging from 'strongly agree' (scored 5) to 'strongly disagree' (scored 1). The survey was validated demonstrating that students who rated highly across these dimensions were more likely to remain enrolled in university than others (Yorke, 2016).

Data and Analysis

To test our hypotheses, we used a Chi2 test to determine whether there was an association between registered attendance and results on the student survey. To conduct this test, we divided the population (students who were invited to attend the extended induction program who also provided responses to the student survey) into two groups: students who attended *any* of the extended induction program and those who did not. This created a categorical variable for attendance (yes/no). We then calculated the expected frequencies for a cross-tabulation table of the two variables (attendance, survey question outcome). We then conducted the test statistic which compares observed and expected frequencies as well as the Degrees of Freedom to compute a Chi2 value. We used this Chi2 value and compared it to the typical Chi2 distribution to derive a p-value and determine whether the calculated frequencies were significantly different from the expected frequencies.

We also created subgroups to test whether the benefit of a first-year induction program was greater for students from historically underrepresented groups. Based on existing literature and our own analysis of data from the university in question, we focused on male students, students under 21, students from minority ethnic backgrounds, and students with disabilities. We created variables for each of these groups: gender (male/female), age (20 and under, 21 and over), race/ethnicity (White, Black/Minority Ethnic), and disability (reported disability/no reported disability). The gender variable is based on self-reported gender identity and allowed students to report "neither male nor female". However, so few students selected this option that we did not include them in the analysis (n = 23). We also looked at a measure of deprivation called the Index of Multiple Deprivation (IMD) which is an official measure of relative deprivation in England (McClennan et al., 2025).

Our variable for age is straightforward as students must provide their dates of birth for enrolment. However, we chose to make the cut off above and below 21 because this is standard practice for higher education demographic analysis. We then created a variable for race/ethnicity that separated White students from students with Black or minority ethnic identities. We aimed to provide a further breakdown by race and ethnicity beyond grouping all Black and minority ethnic students together, but the sample sizes were so small that we did not feel comfortable reporting them. Finally, we created a variable that classified respondents as either having a reported disability or no reported disability.

To meet the assumptions required to use the Chi2 test, we confirmed that each observation was independent of each other (to the best of our knowledge, no one decided to come in groups), the data met the minimum expected cell frequency (all were above 5), and all variables were categorical. The one requirement for a Chi2 test that we cannot be sure we adhered to is random sampling to support generalisability. It is not possible to randomise who is able to attend the first-year induction program and restricting access would undermine the goals and mission of the university. To address this, we tested whether the demographic makeup of the group in the sample as well as

the group who decided to partake in the First-year induction program activities, matched the overall population of first-year students eligible to take part. We found no significant difference between the groups as outlined in the results section below.

Of the 3,932 students who were eligible for the first-year extended induction program (all Y1 and foundation year students) 742 students also took the university's student belonging survey in Autumn 2024. Of these 742 students, 284 did not attend any first-year extended induction program sessions and 458 did. These two groups form the basis for our comparative analysis to test the impact of attending the first-year induction program. Table 1 provides a comparison of the sample we focused on with the wider population of students invited to take part the first-year induction program at the start of the year. The table demonstrates that the samples are largely similar though the sample was slightly more likely to be White than the full population.

Table 1:

Comparison of the Demographics of the Full Population of Students Eligible for the First-Year Induction Program and the Sample Featured in this Study

	Full Population	**Sample**
Gender		
Female	2,123 (54.0%)	408 (55.0%)
Male	1,665 (42.3%)	299 (40.3%)
Non-Binary	93 (2.4%)	23 (3.1%)
Declared Disability	1,147 (29.2%)	231 (31.1%)
Ethnicity		
Black	282 (7.2%)	49 (6.6%)
White	2,468 (62.8%)	507 (68.3%)
Asian	489 (12.4%)	87 (11.7%)
Mixed	308 (7.8%)	47 (6.3%)
Other	246 (6.3%)	34 (4.6%)
Age Group		
Young	3,177 (80.8%)	577 (77.8%)
Mature (21+)	755 (19.2%)	165 (22.2%)

Results/Outcomes

Relationship Between Attendance and Outcomes Across First-Year Students

RQ1: Does attending an extended induction program lead to greater feelings of belonging, engagement, and academic self-confidence?

We found that students who were registered as attending at least one extended induction session had an average of 4-5% greater agreement with questions about their sense of belonging (e.g., +5.1%, $p < 0.05$), academic self-confidence (e.g., +4.9%, $p < 0.05$), and engagement (e.g., 5.5%, $p < 0.05$) during their first term at university. Figure 1 and Table 2 outline the results.

Table 2

Belonging, Self Confidence, and Engagement Scores by Attendance in a First Year Induction Program

Values	Attendee	Non-Attendee	Difference
Belonging	88.2%	83.1%	5.1%
Self Confidence	57.2%	52.2%	4.9%
Engagement	71.5%	66.0%	5.5%

Figure 1

Belonging, Self Confidence, and Engagement Scores by Attendance in a First Year Induction Program



Looking more closely at the individual survey questions that make up the measures, we see some interesting results. Students who attended the first-year induction program in person were more likely to agree with all questions, except for one (and another which was phrased in the negative to improve survey validity). These positive differences range from 1.5% to 11.1%. Note that we have removed the specific name of the university though the students did see it when they took the survey. Table 3 outlines the results by question as well as the difference between students who attended first-year induction program in person and those who did not.

Table 3

Percentage of students who agreed with the questions that make up the measures of belonging, academic self-confidence, and engagement

	In Person Attendee	No In Person Attendance	Difference
Belonging			
I feel at home at the University of XX	77.1%	69.7%	7.4%
Being at the University of XX is an enriching experience	87.3%	81.3%	6.0%
I am happy with my choice to be a student at the University of XX	93.9%	90.8%	3.0%
I'm shown respect by members of staff at the University of XX	95.6%	93.7%	2.0%
I'm shown respect by other students at the University of XX	92.4%	87.3%	5.0%
I feel like I belong at the University of XX	79.0%	72.2%	6.9%
I have found the University of XX welcoming	92.1%	87.0%	5.2%
Academic Self-Confidence			
I expect to do well on my course	84.1%	77.8%	6.2%

I worry about the difficulty of my course	19.7%	20.8%	-1.1%
I doubt my ability to study at university level	45.4%	41.5%	3.9%
I'm confident of completing my course successfully	79.5%	68.7%	10.8%
Engagement			
I am motivated towards my studies	83.6%	72.5%	11.1%
I try to make connections between what I learn from different parts of my course	84.3%	85.9%	-1.6%
I try to do a bit more on the course than it asks me to	55.0%	46.1%	8.9%
I seek out academic staff in order to discuss topics relevant to my course	40.6%	39.1%	1.5%
I put a lot of effort into the work I do	87.6%	78.9%	8.7%
I use feedback on my work to help me improve what I do	77.7%	73.2%	4.5%

These findings suggest that there is a positive relationship between attending the first-year induction program and students' feelings of belonging, academic self-confidence, and engagement in the first term of their studies. While this relationship is not definitively causal, it is strong and positive.

Relationship Between Attendance and Outcomes Across Subgroups

RQ2: Does attendance of an extended induction program produce a greater benefit for students from underrepresented backgrounds than their peers?

While our investigation of our first research question demonstrated positive and significant correlations between attendance at the first-year induction program and outcomes, the focus of this evaluation work critically focuses on equity in student outcomes. Thus, we turn to subgroup analyses of students from historically underrepresented groups: students from low income backgrounds (using a UK government designed measure called Indices of Multiple Deprivation (IMD) which assigns postcodes into quintiles to reflect likely economic deprivation), minority ethnic students, students with declared disabilities, male students, and students under 21, answering our second research question.

As we did with the larger sample, our multiple subgroup analysis looked at differences in measures of belonging, academic self-confidence, and engagement between students who had attended the first-year induction program and those who had not. For example, we compared the outcomes of students from IMD Q1 postcodes (the most deprived areas) who attended at least one session to those from the same IMD Q1 postcodes who did not. Note that we aggregated at the level of minority ethnic – which includes Black, Asian, mixed race, and students who select Other as their racial identity – as presenting data at a more detailed breakdown may allow individuals to be identified. Table 4 outlines the differences in Belonging Score by attendance and Figure 2 provides a visual representation of the results.

Table 4

Agreement in Belonging Scores by Demographic Categories

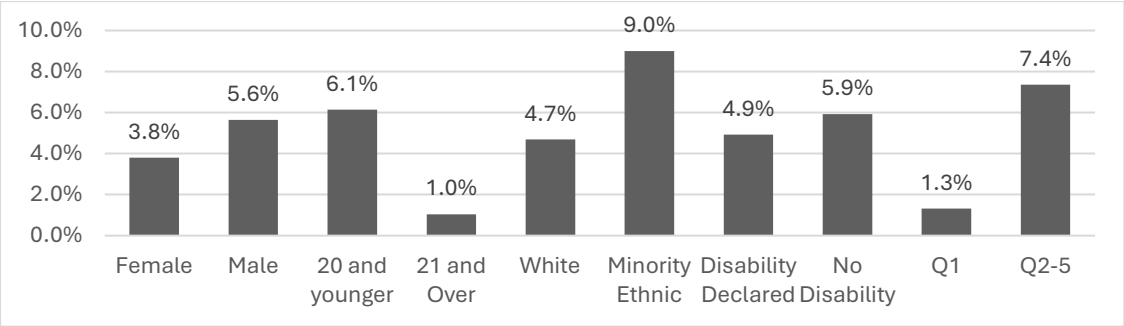
Demographic Category	**Difference in Belonging Score by First Year Induction Program Attendance**
Female	+3.8%*
Male	+5.6%*
20 and younger	+6.1%*
21 and over	+1.0%
White	+4.7%*
Minority Ethnic	+9.0%*

Disability Declared	+4.9%*
No Disability	+5.9%*
IMD Q1	1.3%
IMD Q2-5	+7.4%*

** indicates statistical significance ($p < 0.05$)*

Figure 2

Difference in Belonging Scores by Demographic Categories



As the results above demonstrate, students from minority ethnic backgrounds saw much greater benefits to their sense of belonging from attending first-year induction program sessions than the average across the student sample would suggest. The positive differences are statistically significant for women, men, students under 20, White students, Minority Ethnic students, students with a declared disability, students without a declared disability, and students from IMD Q2-5 areas or areas with lower relative deprivation.

Turning to measures of student academic self-confidence, we see the largest relationship between attendance and outcomes among students from IMD Q1 postcodes. Students from IMD Q1 postcodes who attended first-year induction program sessions saw a 14.4% higher agreement score with our measure of academic self-confidence ($p < 0.05$) suggesting that this group gains considerable benefit from attending these early sessions. Table 5 outlines these results. Figure 3 provides a visual representation.

Table 5

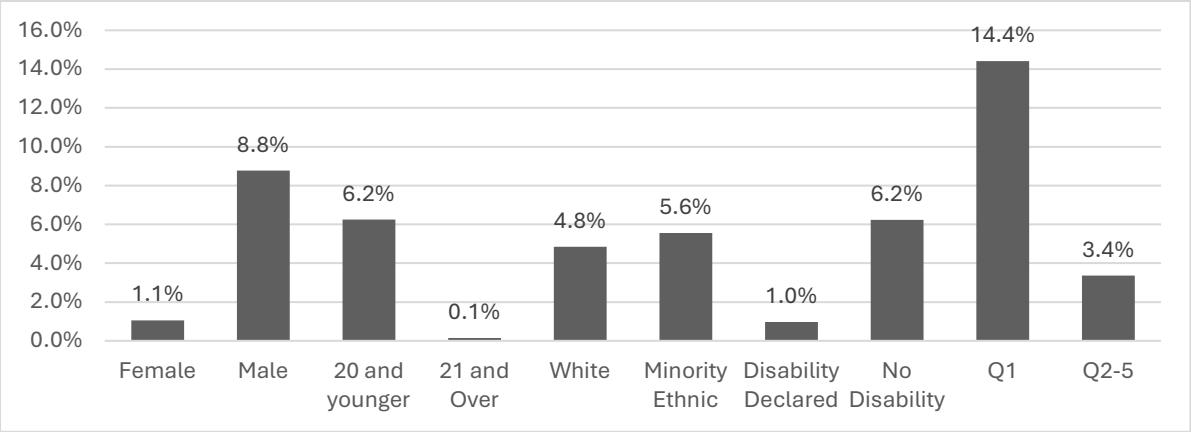
Difference in Academic Confidence Scores by Demographic Categories

Demographic Category	**Difference in Academic Confidence Score by First Year Induction Program Attendance**
Female	1.1%
Male	8.8%*
20 and younger	6.2%*
21 and over	0.1%
White	4.8%*
Minority Ethnic	5.6%*
Disability Declared	1.0%
No Disability	6.2%*
IMD Q1	14.4%*
IMD Q2-5	3.4%

* indicates statistical significance ($p < 0.05$)

Figure 3

Difference in Academic Confidence Scores by Demographic Categories



Finally, we looked at the relationship between engagement and attendance at first-year induction program across student subgroups outlined above. We found similar results for IMD Q1 students (13.3% more of IMD Q1 students who attended the program had a positive score, $p < 0.05$), but another promising result was from our students with declared disabilities. Our analysis suggested that among students with declared disabilities, those who attended first-year induction program sessions had a higher rate of agreement with our engagement measure later in the term by 10% ($p < 0.05$). This suggests that encouraging attendance at first-year induction program sessions may lead to greater engagement in resources among these students. Table 6 provides information on statistical significance. Figure 4 provides a visual representation of the results.

Table 6

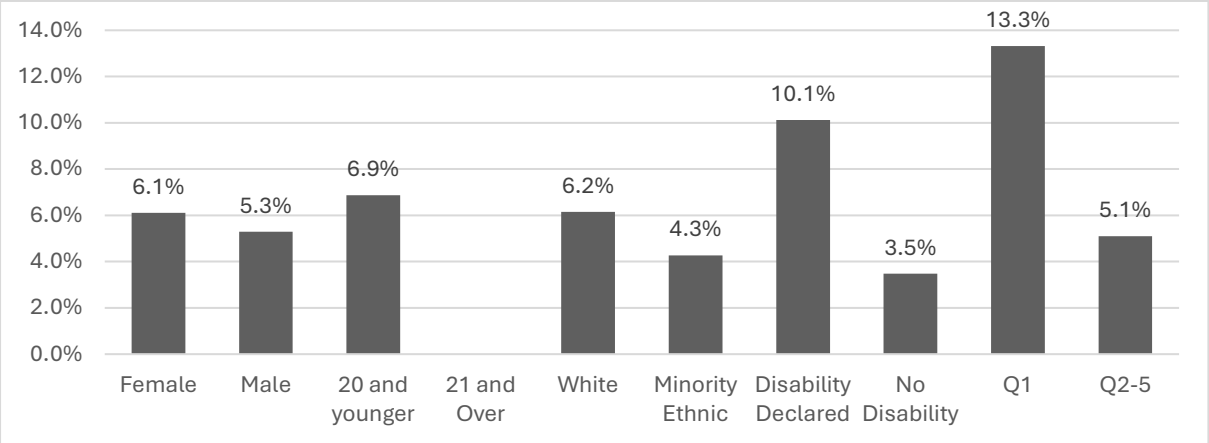
Difference in Engagement Scores by Demographic Categories

Demographic Category	**Difference in Engagement Score by First Year Induction Program Attendance**
Female	6.1%*
Male	5.3%*
20 and younger	6.9%*
21 and over	0.0%
White	6.2%*
Minority ethnic	4.3%
Disability declared	10.1%*
No disability	3.5%
IMD Q1	13.3%*
IMD Q2-5	5.1%*

* indicates statistical significance ($p < 0.05$)

Figure 4

Difference in Engagement Scores by Demographic Categories



Discussion and Next Steps

The analysis suggests that greater resources should be put into encouraging students to attend the first-year induction program sessions in the first few weeks of their tenure at university. Looking at key measures of belonging, academic self-confidence, and engagement, we see that attendance is correlated with higher agreement rates across the board. However, we see some stronger differences in the outcome measures for some students.

Looking at our measure of belonging, minority ethnic students who attend the induction program, compared to those who did not, report a larger difference in agreement scores than all students on average (+9% vs +5.1%). Male students also see a slightly higher score than average (+5.6%, vs +5.1%). These results suggest that these programs are particularly important for minority ethnic and male students entering the university specifically when it comes to belonging. Existing research finds that these groups are particularly likely to face barriers to success and belonging in higher education (Harris, 2018; Hillman & Robinson, 2016). Consequently, these results provide promising evidence that the first-year induction program may be an important first step towards supporting these students and improving equity.

Across the academic self-confidence measures, the results demonstrate differences in agreement scores across student subgroups. Across the sample, students had a +4.9% higher rate of agreement if they attended the program. However, students from low-income backgrounds (denoted by the IMD Q1 measure) who attend the program have a much higher rate of agreement with academic self-confidence than their counterparts who do not attend (+14.4%). This correlation is particularly important given that students from lower-income backgrounds typically enter university with lower confidence in academic skills (İlhan İlter, 2026).

Male students also saw a larger increase in their academic self-confidence measure if they attended the first-year induction program sessions compared to male students who did not (+8.8%). While male students typically report higher confidence in their academic skills than female students, research suggests there may be an overconfidence relative to academic performance (Moraga-Pumarino & Salvo-Garrido, 2025). Consequently, the impact of the program on men may require longer-term measurement of academic success to disentangle any overconfidence from academic success. In general, these positive correlations for low-income and male students suggest that exposure to the introductory sessions can also impact academic specific confidence and belonging for students, particularly those who tend to struggle to meet academic standards compared to the rest of the student body.

Finally, we turn to our measure of academic engagement. Across all students, attending a first-year induction session was correlated with a 5.5% higher reported academic engagement. However, some students saw greater gains than others. Lower-income students reported a statistically significant +13.3% greater academic engagement if they attended the first-year induction sessions. This effect may stem from the fact that extended induction programs provide guidance about how to balance paid employment with academic engagement. Lower income students may find engaging with studies more challenging because of competing demands with paid employment

among other barriers (Kahu & Nelson, 2018) making this type of guidance highly valuable to their ability to engage academically.

Students with a declared disability also saw a statistically significant +10.1% difference if they attended the induction sessions. Engagement among students with disabilities is contingent on institutional accessibility and reasonable adjustments (Heffernan, 2024). Attending the induction sessions provides signposting to relevant support services and processes that can guide students towards help if needed. These results suggest that attending the first-year induction programs can encourage participation in a range of activities to support learning.

In sum, there are positive correlations between attending the first-year induction program and measures of belonging, academic self-confidence, and engagement. However, some groups of students report greater differences when a subgroup analysis focusing on groups was conducted. By performing subgroup analyses, the analyses illuminate the value of such programs for different student groups and better understanding of whether the intervention is likely to support more equitable outcomes for students from historically underrepresented backgrounds.

Universities can take this information and use it to target students to encourage engagement and publicise the positive results from attending the program to promote engagement among new students. The next steps in this line of enquiry include a thorough analysis of intersectional experiences of extended induction programs, looking at students who hold multiple underrepresented identities and understanding their unique experience and needs during this induction period. Moreover, further research is needed to better understand how the specific elements of first-year induction program may impact students in the longer term and whether improved measures in our survey then lead to higher rates of completion, progression, and degree attainment.

Limitations

There are limitations to this analysis. To start, these analyses cannot test if there is a causal relationship between attendance at first-year induction program and outcomes measured in the survey. First, students who are unable to attend first-year induction program sessions may have other complicating factors that make them less likely to score highly on CIWY measures. Attendance at first-year induction program sessions may also be related to courses, potentially muddling the relationship between attendance and CIWY results.

Furthermore, the data leveraged in this analysis is imperfect. It does not include, for example, baseline measures of belonging, academic self-confidence, or engagement before the first-year induction program intervention, though the subgroup analysis controls account for some demographic differences. Finally, record keeping was imperfect, and some students who attended may have been marked as ‘not attending’. However, this issue would increase the likelihood of a false negative (putting people who attended into the ‘non attendee’ group), reducing the appearance of an impact of attendance. As such, the risk of overstating a relationship between the variables is minimised.

Conclusion

In conclusion, the evidence presented in this study suggests that extended induction programs aligned with the principles of transition pedagogy create a disproportionately positive effect for student populations that experience systemic barriers to success in higher education. These effects not only exceed mean cohort-level outcomes but also vary substantively across demographic groups. Specifically, participation in the induction program was associated with elevated institutional belonging among students from minority ethnic backgrounds, enhanced academic self-efficacy among students from low-income backgrounds, and increased academic engagement among students with disabilities, relative to non-participating peers. Such heterogeneous impacts underscore the necessity of a more nuanced, subgroup-sensitive understanding of transitional interventions.

Advancing this line of inquiry would support the development of more targeted, equity-oriented transition strategies that are responsive to differential student needs. While the present study substantiates the overall efficacy of transition and induction programming, further research is required to more precisely delineate their mechanisms and impacts for students facing persistent barriers to success.

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