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## Evaluating leadership, wellbeing, engagement, and belonging across units in higher education: A quantitative pilot study

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### Keywords

Authentic leadership;  
higher education;  
student engagement;  
student experience;  
student leadership;  
student wellbeing.

### Abstract

Students are increasingly diverse, with traditional pedagogies and instructional approaches lacking effectiveness in engaging a variety of student cohorts. This study takes a behavioural approach to examining students in the classroom, seeking to better understand the relationships between authentic leadership, wellbeing, belonging, and engagement among students in an Australian Associate Degree program. This paper reports on a quantitative survey conducted at the beginning of a teaching period, with longitudinal data points expected as this cohort progresses. Preliminary findings are that while students' self-reported authentic leadership scores had associated gains in their psychological wellbeing, and classroom belongingness and engagement, their informal influence played the largest role. This could indicate that supporting students to develop deeper psychological behavioural capabilities (such as self-awareness and sincerity) would have the potential to strengthen the relationship between authentic leadership and student outcomes, by supporting a self-reinforcing effect among the authentic leader behaviours.

### Article Info

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## Introduction

Contemporary society has undergone significant evolution over recent decades, with citizens engaging with education and consuming knowledge in increasingly diverse ways. The traditional students attended lectures and tutorials on-campus. They were likely to have higher than average socioeconomic status, did not need to support their study by working, nor were they likely to hold a primary care responsibility for their children.

The contemporary student population are much less homogenous and therefore more difficult to define. Gender and age are more diverse, entry pathways less conventional, and desired modes of learning challenge current instructional approaches to teaching. Changes, influenced by the deconstructionist attitudes associated with the postmodern era, are occurring to the general beliefs and attitudes towards education (Lincoln, Lynham, & Guba, 2011). The outcome of constant redefinition of the student and their desired learning environment, with concomitant education policy reforms, has resulted in a situation where educational reforms still fail to create optimum learning outcomes, processes and environments.

In developing capable and competent tertiary learners, the intended learning outcomes of curriculum should extend beyond proficiency of knowledge required of their future career prospects towards attributes and behaviours of a flourishing citizen. Many studies report on lists of these so-called 'soft skills' as essential to future development including leadership, communication, collaboration, emotional intelligence, and creativity (Anderson, 2020). Holistic forms of higher education consider student learning, education and teaching, and development in combination (e.g. Kolb & Kolb, 2009). We posit that while significant emphasis is currently given to student learning and higher education teaching practice, there is a dearth in knowledge on student behaviours and associated development.

Students, to be successful in an evolving post-graduation landscape, require more than knowledge and skills. They need attributes, capabilities, and behaviours to be able to follow and adapt to their chosen pathway (Barrie, 2006; Green et al., 2009; Kavanagh & Drennan, 2008; Millican et al., 2011; Walsh et al., 2001); recognizing that their personal and professional pathways will not necessarily be linear (Briscoe et al., 2006; Hall, 2004). To create a strong foundation for learning, educators require a classroom that is both engaging and that students feel connected to. One concept associated with the formation of new campuses is the 'sticky campus'; a location that pulls students from afar and keeps them there (Robertson, 2019). At the heart of a sticky classroom is a location where students feel they belong, combined with high quality learning and teaching. The aim of this paper is to explore preliminary quantitative data relating to the student baselines on their authentic leadership, psychological wellbeing, student engagement, and classroom belongingness, and to outline the following hypotheses:

Hypothesis 1. That authentic leader behaviours in students will have a positive relationship to classroom engagement.

Hypothesis 2. That authentic leader behaviours in students will have a positive relationship to student wellbeing.

Hypothesis 3. That authentic leader behaviours in students will have a positive relationship to student belonging.

To do this, we begin with an overview of the context relating to the sample University, and the differences among their populations compared to traditional cohorts. The literature on evaluating behaviour, authentic leadership, student engagement, student wellbeing, and student belonging are drawn on to postulate three hypotheses for testing. The method summarises the quantitative survey and associated administration and analysis, followed by a presentation of the findings. This paper concludes with a discussion on the implications on the work, and opportunities for future research.

## Context

The University of Tasmania's University College is a newly formed teaching intensive academic college that offers industry informed and employability focused sub-bachelor qualifications. Additionally, University College delivers preparatory and pathway courses that function to prepare students for bachelor level study. University College's courses are geared toward students who often believe higher education is beyond their capabilities or who have never aspired to undertake further education. University College Associate Degrees are two-year programs of study that provide students with specific skills and knowledge and are designed to connect them to employment opportunities in local industries or sectors.

University College brings together academic and industry expertise to ensure students' learning has real-world application. In addition, the University College practice-based pedagogy is informed by outcomes-based education and Kolb and Kolb's (2009) experiential learning theory. Focusing on what students will 'do' as a graduate practitioner, the curriculum is designed around 'the practice' and 'the experience'. This approach ensures that students develop transferrable skills that are key to their employability and future employment. The curriculum exposes students to industry relevant knowledge within a strong academic and theoretical framework. University College's commitment to academic coaching is integral to maintaining positive and authentic development of non-traditional student cohorts.

The University College teaching model centers on learning through practice and consolidating that learning through reflection (see Kolb & Kolb, 2009). This ensures students develop work-related skills, knowledge and behaviour by engaging in purposeful, authentic activity (McRae & Johnston, 2016). University College students, for example, engage in experiential learning activities, ranging from local

case studies and design thinking projects, through to industry or community projects, wicked problems, simulations, placements and fieldwork. In addition, experiences are typically project or problem-based and situated within industry or community contexts.

Most universities have more traditional 'classroom' or 'lecture theatre' teaching models. In addition, they typically offer work integrated learning opportunities, but traditionally these are limited to practicums, placements or 'co-ops' and industry projects. The University College practice-based model extends on the more traditional teaching and experiential education, opting for a balance of practice-based learning, along with classroom-based.

## Literature

The literature review and hypothesis formation are synthesised in this section. The rationale is to demonstrate a clear theoretical link between the literature drawn on and the postulation of each associated hypotheses. This section presents literature on authentic leadership and student engagement to establish why we evaluate students' behaviours as well as their learning and the curriculum they are taught, justifying Hypothesis 1. The literature on student wellbeing and belonging is presented to justify Hypotheses 2 and 3.

### *Evaluating behaviour in courses*

Behaviourism is one of the core tenants of psychological theories and their applications. Its approach is analogous to the ancient and sacred scientific method, applying logic to observations and drawing conclusions. This notion of observational study was made prominent by John Watson in his seminal piece on the topic (Watson, 1957), and contemporary academia has utilized this style through its application across the social sciences. Evaluating behaviour presents its benefits in a variety of fields, from the criminology of the corporate psychopath, to organisational success. Political sciences for example have been applying behavioural evaluations to a variety of interactions, such as the notion of apparent sincerity, in which one behaves in an insincere way to achieve personal agenda (Ferris et al., 2005).

Evaluating behaviour in education is likewise applied, such as classroom productivity and its relationship with student behaviour and wellbeing (Kern et al., 1994). Nonetheless, discourse on behaviour lacks in contemporary education studies, especially when considering students. This is not to say that no research exists, however there is an overemphasis on other evaluation elements regarding the evaluation of behaviour in students in higher education. Our paper looks to remedy this through demonstrating the effects of behavioural theories such as authentic leadership. Higher education studies do not altogether lack research on behaviour in students. Online education has seen a recent surge in literature, and some behavioural analysis does exist. These evaluations tend to focus on surface level analysis however, such as participation rates (Morris et al., 2005) and

time spent studying (Morris & Finnegan, 2008).

### *Authentic leadership and student engagement*

Literature on leadership within student populations often conflates the practice of leadership (involving behaviours and attributes) with the belief that positional roles are core to fostering development (Dempster & Lizzio, 2007; Eich, 2008; Schuh & Laverty, 1983). Such a development perspective takes leadership research back to 'Great Man' philosophies of leadership (e.g. Carlyle, 1840), where 'great men' were identified and given positional power to be followed without question. Against this conflation and drawing on theoretical foundations of authentic leadership (Crawford et al., 2020; Luthans & Avolio, 2003), we argue that cultivating the behaviours of effective and ethical leaders ought to be the focus of curriculum, so that graduates in future positional management roles may exhibit effective leadership.

Authentic leaders are aware of themselves and others, sincere to those around them, have positive morals, think in a balanced manner, and build their own informal influence. Authentic leadership was coined as a response to global challenges to ethical leadership (e.g. 9/11 and the dotcom bust) but extended over time to encompass effective leadership (Luthans & Avolio, 2003). Scholars posit authentic leadership behaviours as the foundation of all positive forms of leadership (Avolio & Gardner, 2005).

Within the organisational context, authentic leaders have a positive effect on their own development and the development of those around them. Authentic leaders tend to be enablers of higher psychological wellbeing (Laschinger & Fida, 2014; McMurray et al., 2010), feel pride in belonging to their workplace (i.e. social belonging: Wong et al., 2010), and are more engaged in their work (Giallonardo et al., 2010; Hassan & Ahmed, 2011). This paper draws on each of these understandings, to investigate the transferability of organisational psychology research to the field of higher education development research, beginning with student engagement.

Student engagement is a multidimensional construct comprising "cognitive (e.g. concentration, effort in an activity) and affective (e.g. enjoyment, interest) elements" (Strati et al., 2017, p. 132). In one study, perceived challenge and teacher support were predictors of student engagement, along with teacher obstruction during high challenge periods as a predictor of disengagement (Strati et al., 2017). Other predictors of student engagement include teacher beliefs (Archambault et al., 2012), self-esteem (Olwage & Mostert, 2014), and social networking (Junco, 2012). In higher education, student engagement is discussed through multiple lenses including psychological, socio-cultural, socio-political, and holistic (Kahu, 2011). We postulate a relationship that may exist between student-level authentic leader behaviours and their engagement in the classroom for several reasons. First, authentic leaders are more engaged in the workplace, and this knowledge may have transferability to the higher education student context. Second, student engagement is predicted by self-esteem, teacher beliefs, and social networking. These

predictors are enabled by authentic leader behaviours. Self-esteem is a product of self-regulatory effects of an authentic leader's balanced processing and self-awareness (Gardner et al., 2005). Awareness of other's beliefs and attitudes is a product of effective awareness and sincerity, and authentic leaders are effective in elements of the knowledge economy such as social networking (Crawford et al., 2020). Based on these established relationships, we posit:

Hypothesis 1. That authentic leader behaviours in students will have a positive relationship to classroom engagement.

### ***Student wellbeing***

While positive emotions such as a sense of belonging signal emotional wellbeing, Fredrickson's theory of positive spirals suggests positive emotions perpetuate flourishing through broadening attention and cognition (thought-action repertoires) and increasing personal resources for flexible and creative thinking, coping with stress and anxiety (Fredrickson & Joiner, 2002). In several studies in the early 2000s Fredrickson's data demonstrates that positive affects reciprocate one another, acting in upward spirals towards positive mental wellbeing.

The correlation between having a sense of belonging (fitting in with others) and perceived meaningfulness of life is empirically established across four studies (Lambert, et al., 2013). Increasing meaning and social relationship quality supports wellbeing and belonging. Belonging and wellbeing can be understood through social identity. Self-enhancement is an individual goal that is enacted through evaluation of their own social identity (Abrams & Hogg 2004). What this means is that an individual person's wellbeing is influenced by how their actions relate to their place among the social identity continuum (personal and interpersonal to group and intergroup). As individuals belong to several groups, they look to understand their sense of self through managing their own interests, essentially finding balance between expectations and their sense of self. Mobility, creativity, and competition all aid in this process, along with self-categorization, which helps determine expectations through specific group identification (Turner et al., 1987). For example, a student who is vegetarian for animal-based ethical reasons may experience internal conflict in a laboratory where they are expected to engage in animal experimentation.

Authentic leader behaviours have a positive relationship with engagement (Gardner et al., 2011). Additionally, given the positive impacts of authentic leader behaviours across a range of contexts, it is reasonable to investigate whether authentic leader behaviours act to promote one of these positive spirals into positive mental health through a heightened sense of belonging and engagement. On this basis, we predict a positive relationship between authentic leader behaviours and student wellbeing.

Hypothesis 2. That authentic leader behaviours in students will have a positive relationship to student wellbeing.

### ***Student belonging***

Belonging is fundamental to human flourishing and survival (Ryan & Deci, 2000). Belonging is defined and shaped differently among the existing literature. The construct of belonging is often explored from multiple analytical lenses: social locations, identification and attachment, and ethical/political values (Yuval-Davis, 2006). Social locations refer to belonging to a specific set of demographics (e.g. young, female, and university educated). Identifications and emotional attachments refer to the construction of narratives that individuals build, and their connection to their rhetoric of story and this story may include emotional investments and attachments to others and/or groups. Ethical and political values are focused on the specific attitudes and attachments to ideology, and on how these are valued and/or judged (Yuval-Davis, 2006). We focus on the identifications and emotional attachments of students, with a specific focus on how this is informed by their higher education context as a 'student' and a 'learner'.

Commitment, engagement, and connectedness are incorporated as three critical components of a belongingness model (Anderson-Butcher & Conroy, 2002). Commitment to the organisation (Semedo et al., 2016), employee engagement (Giallonardo et al., 2010; Hassan & Ahmed, 2011), and team connectedness (Bird et al., 2009) have been either empirically or theoretically related to authentic leadership.

Within the higher education literature, belonging is considered important for enabling students to succeed. Disconnection of students on the negative along with creating a positive and caring environment on the positive are challenges that student belonging could solve (O'Keeffe, 2013). Student retention is a frequently cited reason for seeking to engage students and support their sense of belonging (Testa & Egan, 2014; Yorke & Longden, 2004). Belonging is often linked to engagement with the belief that these constructs in practice will enable greater academic outcomes for students (Zumbrunn et al., 2014).

Online communication and groupwork were identified as key belonging themes in a retention intervention implementation in first year business management students (Masika & Jones, 2015). Collaboration in a community of practice, establishing shared goals, collaborative working, opportunities for discussion and debate, and mutual respect were key themes identified through their focus group studies (Masika & Jones, 2015). Drawing on the current literature supporting a relationship between components of belongingness in students and authentic leadership and recognising the value of developing student feelings of belonging to their success and retention, we posit a relationship between student authentic leader behaviours and their sense of belonging.

Hypothesis 3. That authentic leader behaviours in students will have a positive relationship to student belonging.

## Method

### Procedure

Students were invited to participate in this study's survey following a presentation by the researchers at the University of Tasmania's Cradle Coast, Newnham, and Sandy Bay Campuses. Convenience sampling was utilized as it allowed the researchers to draw a sample from the large population under limited time, and workforce (Eitkan et al., 2016). Use of pen-and-paper questionnaires was the preferred data collection method for this study as it allowed for a combination of four different measurements in one survey. This study was approved by the Tasmanian Social Sciences Human Research and Ethics Committee (Reference Number H0018174).

These measurements were in the form of four unique questionnaires, testing for authentic leadership behaviour, wellbeing, belonging, and engagement. The verbal presentation provided students with an overview of the study, as well as its aims, and assurances of voluntary participation, details of involvement, withdrawal procedure and confidentiality. The latter of which was promoted by the delivering lecturer leaving the room during the presentation to ensure they do not know which student participated. Following the presentation students either completed the survey or returned it to the researcher blank.

Analysis on the single timepoint data was conducted in IBM SPSS Statistics and the AMOS extension were used to analyse the data once collected. Testing included demographic reporting, reliability analysis, variable computation, significance testing, and regression analysis. These were done to test for relationships between the various scales, which included authentic leader behaviours, belonging, engagement, wellbeing, gender, and age.

### Measures

Student self-assessments for their authentic leader behaviours were measured using the Authentic Leader Behaviour Index (ALBI: Crawford, 2019). The ALBI was developed to assess the five behaviours of an authentic leader (Crawford et al., 2020): awareness, sincerity, balanced processing, positive morals, and informal influence. The development of the tool was conducted among a diverse sample exceeding 1,000 participants, and applying rigorous psychometric analysis (Crawford & Kelder, 2019). The scale consists of 15 items assessing these behaviours on a 7-point Likert scale. The results were cross analysed with the study's other measures to investigate possible relationships. Preliminary Cronbach alphas for the ALBI were 0.87.

The Utrecht Work Engagement Scale (UWES-9: Schaufeli et al., 2006) was adapted for use as a measurement tool for student engagement in the classroom. The modified items are presented in Table 1, demonstrating strong loadings in maximum likelihood confirmatory factor analysis.

Table 1. Validity of the revised Student Engagement Scale

Revised items	$\bar{x}$ (SD)	Loading
1. In my class, I feel bursting with energy.	3.95 (1.35)	0.84
2. In my course, I feel strong and vigorous.	4.30 (1.23)	0.87
3. I am enthusiastic about my study.	4.73 (1.30)	0.85
4. My learnings inspire me.	5.02 (1.27)	0.78
5. When I get up in the morning, I feel like going to University	4.02 (1.52)	0.84
6. I feel happy when I am studying intensely.	4.30 (1.36)	0.72
7. I am proud of the work that I do.	5.20 (1.36)	0.52
8. I am immersed in my study.	4.52 (1.21)	0.83
9. I get carried away when I am in class.	3.70 (1.32)	0.07

Interestingly, item nine performed poorly, but had little effect on the model fit reported in Table 2. Although the chi-square test was significant (Model 1:  $\chi^2/df = 1.66$ ,  $p = 0.02$ ; Model 2:  $\chi^2/df$ ,  $p = 0.01$ ), the sample size is far too small to confirm these fit indices with any degree of confidence. Crawford and Kelder (2019) recommend a minimum of 150, whereas Barrett (2007) recommends a definitive minimum of 200 for any form of structural equation modelling. Future studies will need to confirm the preliminary findings, so we opted not to exclude the ninth item. Composite reliability (CR) was used to test internal consistency, noting that the Cronbach's alpha was 0.89.

Table 2. The fit of the revised Student Experience Scale

Model	$\chi^2/df$	CFI	TLI	RMSEA	CR	AVE
Model 1 (Full Scale)	1.66	0.93	0.88	0.12	0.91	0.55
Model 2 (Item 9 Removed)	1.87	0.93	0.87	0.14	0.93	0.63

Degrees of freedom (df), comparative fit index (CFI), Tucker-Lewis Index (TLI), root mean square error of the approximation (RMSEA), composite reliability (CR), and average variance explained (AVE).

Assessment of student belonging was measured through Anderson-Butcher and Conroy's (2002) 5-item scale. Their measurements were developed due to the lack of attention around student belonging, especially in the context of youth development programs. Belonging scores were positively related to attendance rates for the program, with 417 students having completed the questionnaire. This scaled was adapted to the context of students in higher education for reliability and relevance. Preliminary Cronbach alphas for the scale were 0.84.

The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) was used to measure self-assessed student wellbeing. This scale was developed by expert panel discussions, qualitative research focus groups, psychometric testing and validated through student and representative population samples (Tennant, 2007). The scale itself consists of 14 items assessing hedonic and eudemonic perspectives of mental wellbeing. Adopting a 5-point Likert scale, student scores were calculated by totaling the scores of each item, the higher the score, the higher the indication of high mental well-being. Preliminary Cronbach alphas for the WEMWBS were 0.94.

### Sample

In the student sample, 46 students completed all four questionnaires, with only one student partially completing the survey. Of this sample 18 identified as male, and 28 identified as female. The median age of participants was 34, with 60 and 20 at the extremes of the scale.

Students who completed the survey were all enrolled in a practical business course, of which researchers attended 4 separate classes. Some students were enrolled in more than one of these classes and the data analysis was adjusted to accommodate this. The units shared commonalities in their content delivery and intended learning outcomes. For example, all classes had 2-hour lectures and required students to attend full-day workshops.

## Findings

We tested H1, H2, and H3 using Pearson's correlation coefficient, linear regression, and multiple linear regression. Table 3 reports on the correlations across the variables used in this study and provides preliminary support for each of the hypotheses. Table 4 reports on multiple linear regression of the effect of the individual dimensions on the outcomes posited in the three hypotheses. The following outlines the collected data, its interpretation will be discussed in the following section.

Table 3. Correlations across variables

	1	2	3	4	5	6	7	8	9	10	11
1. Age	1										
2. Gender	0.30*	1									
3. ALBI	0.26	0.17	1								
4. Awareness	0.15	-0.06	0.76**	1							
5. Sincerity	0.16	0.16	0.69**	0.37*	1						
6. Balanced Processing	0.15	-0.02	0.83**	0.63**	0.53**	1					
7. Positive Morals	0.25	0.28	0.78**	0.44**	0.35*	0.60**	1				
8. Informal Influence	0.28	0.25	0.40**	0.50**	0.53**	0.45**	0.53**	1			
9. Wellbeing	0.27	-0.04	0.40**	0.20	0.23	0.28	0.33*	0.46**	1		
10. Engagement	0.30	0.14	0.45**	0.42**	0.10	0.38*	0.33*	0.49**	0.61**	1	
11. Belonging	0.44**	0.42	0.32**	0.32*	0.21	0.18	0.33*	0.54**	0.60**	0.68**	1
$\bar{x}$ (SD)	33.60	1.61	5.78	5.67	6.11	5.83	5.92	5.33	4.87	4.42	5.43
SD	14.04	0.49	0.59	0.70	0.64	0.78	0.86	0.83	1.05	0.97	0.87

\*  $p < 0.05$ , \*\*  $p < 0.01$

Table 4. Multiple regression analyses

	Student Engagement			Student Wellbeing			Student Belonging		
	$\beta$	SE	t	$\beta$	SE	t	$\beta$	SE	t
Awareness	0.16	0.24	0.90	-0.13	0.28	-0.68	0.15	0.22	0.86
Sincerity	-0.33	0.24	-2.00	-0.05	0.28	-0.27	-0.06	0.23	-0.35
Balanced Processing	0.25	0.25	1.22	0.13	0.29	0.59	-0.20	0.23	-1.00
Positive Morals	-0.01	0.19	-0.07	0.10	0.22	0.53	0.14	0.18	0.79
Informal Influence	0.20	0.20	2.60	0.43	0.24	2.24	0.51	0.19	2.88

## Student engagement

As theorised, there was a positive correlation between authentic leader behaviours and student engagement ( $r = 0.45$ ,  $p < 0.01$ ). Using least squares linear regression, the model fit was satisfactory ( $r^2 = 0.20$ , Durbin-Watson = 1.41,  $F = 11.02$ ,  $p < 0.01$ ) with authentic leader behaviour having a positive effect on student engagement ( $\beta = 0.45$ ,  $p < 0.01$ ). To test for a key least squares regression assumption, that the error terms are uncorrelated, a Durbin-Watson statistic was used (Durbin & Watson, 1951). The score was not too distant from a score of 2, representing a robust model. This confirms Hypothesis 1. When assessed with multiple regression, with the five behaviours of authentic leaders as predictors, model fit was moderate ( $r^2 = 0.34$ , Durbin-Watson = 1.38,  $F = 4.07$ ,  $p < 0.01$ ), informal influence was the only significant predictor ( $\beta = 0.20$ ,  $p < 0.05$ ).

## Student wellbeing

For the relationship between authentic leader behaviours and student wellbeing, correlation scores demonstrated

some form of relationship ( $r = 0.40$ ,  $p < 0.01$ ). Least squares linear regression was used as a more robust assessment ( $\beta = 0.39$ ,  $p < 0.01$ ), with a satisfactory model fit ( $r^2 = 0.15$ , Durbin-Watson = 1.33,  $F = 7.95$ ,  $p < 0.01$ ). This affirms Hypothesis 2. Like student engagement, when tested at the dimensional level of authentic leaders, the strongest factor was informal influence ( $\beta = 0.43$ ,  $p < 0.05$ ), although the model demonstrated some flaws in the Analysis of Variance (ANOVA) test ( $r^2 = 0.22$ , Durbin-Watson = 1.34,  $F = 2.30$ ,  $p = 0.06$ ). This may be due to a lower sample size.

## Student belonging

The correlation scores between authentic leader behaviours and student belonging were significant ( $r = 0.32$ ,  $p < 0.01$ ). In least squares linear regression, the model was reasonably robust ( $r^2 = 0.18$ , Durbin-Watson = 1.89,  $F = 9.37$ ,  $p < 0.01$ ), with authentic leader behaviours having a positive influence on student belonging ( $\beta = 0.42$ ,  $p < 0.01$ ). Multiple regression was used to assess the individual behavioural impact on student belonging. The model was robust ( $r^2 = 0.32$ , Durbin-Watson = 2.00,  $F = 3.84$ ,  $p = 0.01$ ) with informal influence the greatest predictor of belonging ( $\beta = .51$ ,  $p < 0.01$ ).

## Discussion

The foundation of this study is research largely undertaken in contexts other than higher education. Positive organisational scholarship, and positive behavioural theory, developed in the field of organisational psychology as a response to unethical business practices and their large-scale negative consequences. The theory promotes the notion that positive emotions, reinforcement and reward lead to positive results. Studies in the field report a positive influence on various cognitive functions such as creativity, innovation, sustainable relationships, engagement and knowledge sharing behaviours. Crawford et. al's (2019) research distinguish the five behaviours that make a good leader and suggests that authentic leaders can be ethical with a strong positive moral perspective, while remaining effective through the combination of informal influence and a strong self-concept. Authentic leader behaviours are the synthesis of doing what is right, effective and efficient, with positive effects for self and others.

This study sought to translate broad findings into the specific context of student leader behaviours, to identify if, and to what extent, authentic leader behaviours are positively related to factors already established as important for student flourishing.

Each of the three hypotheses were supported by the results. That is, the study demonstrated positive relationships between engagement, wellbeing and belonging in University College students who completed the authentic leader behaviours survey instrument.

The quantitative analysis demonstrates that supporting the development of authentic leader behaviours in student cohorts will have a positive effect on individual

student's engagement (H1), psychological wellbeing (H2), and belonging in the classroom (H3). This research study tested the relationship of students' (self-assessed) authentic leadership behaviours related to their engagement, wellbeing and belonging. The objective was to shed light on different pedagogies and structures that can contribute to positive mental health, engagement and belonging among students with a concentration on the behaviours of authentic leaders. Through relationship analysis methods, as outlined above, results showed that students with higher authentic leader behaviours demonstrated heightened belonging, engagement and overall wellbeing.

Using multiple regression analysis, we assessed the relationship between the specific five authentic leader behaviours (awareness, sincerity, positive moral perspective, balanced processing, informal influence) and their effect on engagement, wellbeing, and belonging. Notably, informal influence was the only independent variable with a significant p value.

In the literature, authentic leader behaviours are positioned as a multilevel framework: with awareness and sincerity as the deepest level, balanced processing and positive morals on the middle level, and informal influence as the capstone (Crawford et al., 2020). This indicates that the authentic leader behaviours instrument may test the general high-level sentiment of students' authentic leader behaviours, but on an individual level this cohort of students have difficulty interpreting and assessing their own, deeper level, behaviours. That is, students may lack sufficient sociopsychological development to be able to interrogate the underlying levels of the five authentic leader behaviours.

For the University College context, this suggests in order to develop authentic leader behaviours in Associate Degree students, effort should be focused on developing their awareness and sincerity, particularly given students likely over-rated their scores on sincerity (see Table 4).

Considering each hypothesis in turn, Hypothesis 1 posited that authentic leader behaviours in students will have a positive relationship to classroom engagement. The survey results were that students with higher authentic leader behaviours were more engaged in class ( $\beta = 0.45$ ,  $p < 0.01$ ). This finding, alongside the literature suggesting that more engaged students tend to perform better (Kahu, 2011; Olwage & Mostert, 2014; Strati et al., 2017), suggests that curriculum that explicitly develops authentic leader behaviours as a positive contributor to engagement, could improve student performance.

Hypothesis 2 posited that authentic leader behaviours in students will have a positive relationship to student wellbeing. The survey results confirmed that students with higher authentic leader behaviours had greater mental wellbeing ( $\beta = 0.39$ ,  $p < 0.01$ ). In the higher education context, where 1 in 3 students experience or show symptoms of mental illness or disorders, responding to poor student wellbeing is critical. Likewise, literature has shown that wellbeing is a significant factor in organisational success, especially in students as they organize in classrooms. The finding that authentic leader behaviours positively affect student wellbeing,

suggests that curriculum that explicitly develops authentic leader behaviours may be a positive contributor to student wellbeing, perhaps through reciprocal positive spiral effects, such as identified by Fredrickson and Joiner (2002). For example, upward spirals towards positive mental wellbeing can have positive affects to other behaviours. Positive mental wellbeing can result in increasing self-efficacy. Self-efficacy has demonstrated spirals to motivation and student success (Yukselturk & Bulut, 2007). As such, further research into fostering student well-being has the potential to promote other behaviours linked to student success.

Hypothesis 3 posited that authentic leader behaviours in students will have a positive relationship to student belonging. The survey results confirmed that students with higher authentic leader behaviours felt they belonged more in their college, classes and cohort ( $\beta = 0.42$ ,  $p < 0.01$ ). In the context of University College's non-traditional cohort, attrition from their courses is a critical issue, as for any higher education course that has high attrition. Given that literature has demonstrated that belonging and engagement are linked to participation and retention (Giallonardo et al., 2010; Hassan & Ahmed, 2011; Masika & Jones, 2015), it is possible that curriculum that develops increased authentic leader behaviours, and therefore sense of belonging, will result in students being less likely to leave.

## Limitations and future research

The paper reports the preliminary results of a longitudinal study. Although, our results suggest authentic leadership behaviours have a positive effect, future research is needed with greater student numbers and more diverse cohorts. This paper reports on a quantitative survey conducted at the beginning of a teaching period. Longitudinal data points will be collected as this cohort progresses. As such, the length of future study is determinant on the cohort's progression. The study is limited by its sample size, likewise, it focuses on the teaching of one discipline. Future research would benefit from a larger sample size, as well as the consideration of other areas of learning and teaching in higher education.

University College has a non-traditional pedagogy and instructional approach that is designed to effectively engage its non-traditional, heterogeneous student cohort. The study is longitudinal and will follow each cohort through the curriculum. Preliminary findings indicate informal influence has the most significant role in psychological wellbeing, and classroom belongingness and engagement. Future research will explore if supporting students to develop deeper psychological behavioural capabilities (such as self-awareness and sincerity) will strengthen the relationship between authentic leadership and student outcomes, by supporting a self-reinforcing effect among the authentic leader behaviours.

## Conclusion

Leadership is distinguished in organisational psychology as a driver for change and wellbeing. Leadership skills consistently ranks as a critical success factor for student employability

and future success. Three factors (engagement, wellbeing, and belonging) are established in the literature as significant for student success in their future personal and professional lives. This exploratory study leverages a preliminary dataset from a longitudinal study that investigates engagement, wellbeing, belonging, and leadership in student populations. Through regression analysis, each of the three hypotheses were confirmed, demonstrating a positive relationship between authentic leadership behaviours and students' engagement, wellbeing, and belonging.

When considering what this paper means in the higher education context, our results suggest developing authentic leadership behaviours in students will have a positive effect on their own sense of wellbeing, belonging, and engagement. Students who are more engaged tend to perform better, and so factors that influence engagement could improve student performance. Wellbeing is a significant factor in organisational success, especially in students as they organize in classrooms. In a higher education context where 1 in 3 students experience or show symptoms of mental illness or disorders, responding to poor student wellbeing is critical. Belonging and engagement are linked to participation and retention. Students who feel a sense of belonging are perhaps less likely to leave.

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