

A DATA-DRIVEN, INCLUSIVE AND STUDENT-CENTRED MODEL FOR ENGAGEMENT, BELONGING AND SUCCESS IN HIGHER EDUCATION

Sarvin Hassani, & Alessia Mevoli

Faculty of Business and Law, Anglia Ruskin University (UK)

Abstract

Student engagement and continuation remain critical challenges for higher education, particularly in the post-pandemic context where traditional indicators often fail to capture the complexity of learners' experiences (Collins, Dooley & O'Brien, 2022). Many institutions continue to rely on retrospective data to identify students at risk, limiting the timeliness and effectiveness of support. This paper presents an innovative, data-driven and student-centred model designed to enhance engagement, belonging, and academic success across undergraduate and postgraduate programmes.

The model utilised weekly monitoring of virtual learning environment (VLE) activity to identify low-engaged students and facilitate targeted interventions. Initial implementation resulted in a 28% increase in online engagement during the first trimester and a 41% increase during the second trimester compared with the previous academic year. The framework subsequently evolved into a comprehensive student-success model incorporating academic-skills development, peer mentoring, and dedicated student-success coaching. Outcomes included improved submission rates, enhanced continuation, and a reduction in attainment disparities. The paper argues that combining data-informed decision-making with personalised and inclusive support can significantly improve student outcomes and strengthen students' sense of belonging within higher education.

Keywords: *Student engagement, inclusive education, data-driven intervention, continuation and progression, equity and belonging.*

1. Introduction

Student success has become a central priority within higher education institutions worldwide. Increasing diversity within student populations, rising mental health concerns, and the lingering effects of the COVID-19 pandemic have created new challenges for universities seeking to support student engagement and retention. Traditional approaches to student support often rely on reactive interventions that occur only after academic difficulties become evident. Such approaches frequently fail to address underlying issues affecting student participation, confidence, and belonging.

Research consistently demonstrates that student engagement is strongly associated with academic achievement, continuation, and overall student satisfaction (Kahu & Nelson, 2018). Equally important is students' sense of belonging, which has been identified as a significant predictor of persistence and success in higher education (Thomas, 2012). Institutions therefore require proactive strategies capable of identifying disengagement early and providing timely support before challenges escalate.

This paper presents a data-driven, inclusive, and student-centred model developed and implemented in the Faculty of Business and Law at Anglia Ruskin University (ARU). The initiative was designed to enhance student engagement, foster a stronger sense of belonging, and improve academic success through the integration of learning analytics, personalised interventions, peer support, and academic-skills development. Evidence from its implementation demonstrates significant improvements in student engagement, continuation rates, and equity outcomes, highlighting the potential of holistic and proactive support frameworks within higher education.

2. Literature review

Student engagement has long been recognised as a multidimensional concept encompassing behavioural, emotional, and cognitive dimensions of learning (Fredricks, Blumenfeld & Paris, 2004). Contemporary higher education environments generate substantial digital data through learning management systems, creating opportunities for institutions to better understand patterns of student participation and engagement.

Learning analytics has emerged as a promising approach to supporting student success. By analysing data generated through student interactions with digital learning platforms, institutions can identify students at risk of disengagement and implement targeted support measures (Siemens & Long, 2011). However, critics caution that analytics alone cannot address the complex social and emotional factors influencing student outcomes (Prinsloo & Slade, 2017).

The concept of belonging has gained increasing attention within student-success literature. Thomas (2012) argues that students are more likely to persist when they feel connected to their academic community. Belonging is particularly important for students from underrepresented backgrounds, who may experience additional barriers to engagement and achievement.

Inclusive approaches to student support seek to reduce barriers while recognising the diverse needs of learners. Such approaches move beyond deficit-based models that focus solely on students' weaknesses and instead emphasise strengths, empowerment, and community building (Ainscow, 2020). Integrating learning analytics with inclusive and relational support mechanisms therefore offers significant potential for improving student outcomes.

3. The centre for student success: An institutional approach to student engagement and success

The model was initially developed in response to growing concerns regarding student engagement, retention, and continuation within the Faculty of Business and Law at Anglia Ruskin University. Analysis of institutional data revealed that many students who eventually withdrew or underperformed had shown signs of disengagement much earlier in the academic year. However, existing support mechanisms relied heavily on traditional indicators such as attendance records, assessment submissions, and end-of-module outcomes. While these measures provided useful information, they were often retrospective in nature, identifying issues only after students had already disengaged from their studies or reached a point where intervention was less effective.

This reactive approach presented several challenges. Attendance data alone did not fully capture student engagement, particularly in an increasingly digital learning environment where students interact with course materials, peers, and staff through multiple channels. Similarly, module results and assessment outcomes often served as lagging indicators, highlighting problems only after academic performance had already been affected. As a result, opportunities for early intervention were frequently missed, limiting the institution's ability to provide timely and personalised support.

Recognising these limitations, the faculty sought to develop a more proactive and evidence-based approach to student success. The aim was to move beyond retrospective measures and utilise real-time engagement data to identify students who may be at risk of disengagement before academic difficulties emerged. Drawing upon learning analytics from the virtual learning environment (VLE), the model enabled weekly monitoring of student activity patterns, including access to learning materials, participation in online activities, and overall engagement with their programme of study. Students demonstrating low levels of engagement were identified early and contacted through personalised interventions, allowing support to be offered at a stage when it could have the greatest impact.

The development of this model marked a significant shift from a reactive to a preventative approach to student support. Rather than waiting for students to miss assessments, fail modules, or formally withdraw, the faculty adopted a strategy centred on early identification, meaningful engagement, and targeted intervention. This approach recognised that student success is influenced by a complex combination of academic, personal, social, and motivational factors, and that timely support is essential in helping students overcome barriers to progression and achievement.

3.1. Early identification through learning analytics

The first phase involved systematic monitoring of student activity within the VLE. Engagement data were reviewed weekly, enabling the identification of students demonstrating low levels of online participation. Students identified as potentially at risk received personalised contact from academic staff, including emails, telephone calls, and invitations to support sessions.

This proactive approach shifted intervention from a reactive to a preventative model. Rather than waiting for students to fail assessments or withdraw, support was provided at an earlier stage when challenges could still be addressed effectively.

3.2. Academic skills and peer support

Following initial success, the model expanded to include structured academic-skills provision and peer-led support. Postgraduate students were recruited as mentors and worked alongside academic staff to deliver workshops, writing retreats, assessment guidance sessions, and resit support activities.

These initiatives created collaborative learning environments where students could seek assistance without fear of judgement. Peer mentors provided relatable role models while helping students navigate academic expectations and university processes.

3.3. Dedicated student success coaching

The final stage introduced dedicated student-success coaches who provided personalised support to students across multiple campuses. Coaches engaged proactively with students experiencing academic, personal, or engagement-related challenges.

Working alongside academic staff, professional services, and peer mentors, success coaches helped students access appropriate support while maintaining regular contact throughout their academic journey. This created a coordinated and holistic support network focused on enhancing student success and wellbeing.

4. Outcomes and impact

Implementation of the model generated substantial improvements across several key performance indicators.

4.1. Enhanced student engagement

The most immediate impact was observed in levels of student engagement. During the first year of implementation, VLE activity increased by 28% during the first trimester and by 41% during the second trimester compared with the previous academic year.

These findings suggest that regular monitoring combined with personalised outreach can significantly influence student participation. Students who may otherwise have been disengaged were identified early and encouraged to reconnect with their studies.

4.2. Improved assessment participation

Coursework submission rates increased by 9% following implementation. Improved participation is particularly significant because assessment engagement is often a strong predictor of continuation and academic success.

The increase suggests that students benefited from the combination of proactive support, academic-skills development, and peer mentoring opportunities. Students reported greater confidence in approaching assessments and improved understanding of academic expectations.

4.3. Increased continuation rates

Continuation rates within the Faculty of Business and Law (FBL) at Anglia Ruskin University reached 95% in 2023–24, representing the highest level achieved in recent years. This outcome is particularly significant given the sector-wide challenges facing higher education institutions, including declining student engagement, increasing financial pressures, and growing concerns around student retention and progression.

The improvement in continuation rates suggests that early identification of disengagement, combined with proactive and sustained support, can positively influence students' decisions to remain enrolled and successfully progress through their programmes. A key feature of this approach was the establishment of the Centre for Student Success (CfSS), which was launched within the Faculty of Business and Law in September 2022. The Centre was created to provide a coordinated and evidence-based framework for supporting students through early intervention, academic-skills development, engagement monitoring, peer support, and personalised pastoral guidance.

Continuation rates within FBL have shown a sustained upward trajectory since the introduction of the Centre for Student Success. Continuation increased from 89.2% in 2020–21 to 95.0% in 2023–24, before remaining above 93% in subsequent years. While continuation rates also improved across other faculties during the same period, the rate and scale of improvement within FBL were notably stronger. This

is particularly noteworthy because FBL was the only faculty at ARU operating a dedicated Centre for Student Success during this period.

The comparative faculty data provides additional evidence of the effectiveness of the CfSS model. Whereas continuation rates in other faculties generally improved gradually over time, FBL experienced a more substantial increase following the implementation of the Centre. Although it is not possible to attribute all improvements solely to the CfSS initiative, the timing and consistency of the upward trend strongly suggest that the Centre played a significant role in enhancing student engagement, fostering a sense of belonging, and supporting student persistence.

The findings indicate that a structured, proactive, and student-centred approach to support can have a measurable impact on continuation outcomes. By identifying students at risk of disengagement early and providing timely interventions, the Centre for Student Success has contributed to creating an environment in which students feel supported, connected, and more likely to continue their studies successfully.

4.4. Reduction in equity gaps

One of the most significant outcomes was the reduction in the ethnicity award gap to 13%, exceeding institutional benchmarks. This finding highlights the potential of inclusive support frameworks to address disparities in student outcomes.

Rather than focusing solely on specific demographic groups, the model adopted a universal yet personalised approach, ensuring all students had access to support while allowing targeted intervention where necessary.

4.5. Student experience and belonging

While quantitative outcomes provide important evidence of effectiveness, qualitative feedback offers additional insights into the student experience.

Students consistently reported appreciating proactive contact from staff. Many described outreach communications as demonstrating that the university cared about their success and wellbeing. This sense of being noticed and valued contributed positively to students' confidence and motivation. Workshops, writing retreats, and peer-led activities also fostered opportunities for students to build relationships with peers and staff. These interactions contributed to a stronger sense of community and belonging.

The findings support existing literature suggesting that belonging is not simply a by-product of academic success but a key factor contributing to positive student outcomes. Students who feel connected to their institution are more likely to engage, persist, and succeed.

4.6. Discussion

The success of the model demonstrates the value of combining data-driven approaches with human-centred support mechanisms. Learning analytics provided the means to identify students requiring support, but meaningful impact was achieved through personalised interventions and relationship-building activities.

The model challenges the notion that technology alone can solve student-engagement challenges. Instead, technology serves as an enabling mechanism that allows institutions to direct support where it is most needed. Human interaction remains central to effective intervention.

Furthermore, the framework highlights the importance of adopting a holistic perspective on student success. Academic achievement, wellbeing, engagement, and belonging are closely interconnected. Institutions seeking to improve continuation and progression should therefore consider integrated approaches that address multiple dimensions of the student experience. The model also offers a scalable solution for institutions operating across multiple campuses and diverse student populations. By combining centralised data monitoring with localised support provision, universities can create responsive systems capable of meeting varied student needs.

5. Conclusion

This paper has presented a data-driven, inclusive, and student-centred model developed within the Faculty of Business and Law at Anglia Ruskin University to enhance student engagement, belonging, continuation, and academic success. By combining learning analytics with personalised interventions, academic-skills provision, peer mentoring, and dedicated student-success coaching, the model has demonstrated measurable improvements across a range of key student-success indicators, including engagement, coursework submission rates, continuation, and equity outcomes.

The findings suggest that student success is most effectively supported when institutions move beyond reactive approaches and adopt proactive, preventative, and relationship-based models of support. While learning analytics provided the mechanism for identifying students at risk of disengagement, it was the human-centred interventions and sustained personalised support that translated data into meaningful outcomes. This reinforces the importance of viewing student engagement not simply as a measure of activity, but as a reflection of students' sense of connection, belonging, and confidence within their academic community.

The experience of the Faculty of Business and Law further demonstrates the potential value of dedicated student-success structures such as the Centre for Student Success (CfSS). Since its establishment in 2022, the Faculty has experienced sustained improvements in continuation rates, reaching 95% in 2023–24, while also reducing attainment gaps and increasing student participation. Although multiple factors contribute to student outcomes, the comparative faculty data suggest that a coordinated and evidence-based approach to student support can play a significant role in enhancing progression and persistence.

At a time when higher education institutions face increasing pressures relating to student retention, wellbeing, and widening participation, the model presented in this paper offers a practical, scalable, and transferable framework for supporting diverse student populations. Future research should examine the long-term sustainability of such interventions, explore their impact across different institutional contexts, and further investigate the relationship between belonging, engagement, and student success. Ultimately, the findings highlight that when students feel seen, supported, and connected, they are more likely to engage, succeed, and fulfil their academic potential.

References

- Ainscow, M. (2020). Promoting inclusion and equity in education: Lessons from international experiences. *Nordic Journal of Studies in Educational Policy*, 6(1), 7–16.
- Collins, A., Dooley, B., & O'Brien, M. (2022). Student engagement in higher education following COVID-19: Emerging challenges and opportunities. *Higher Education Research and Development*, 41(5), 1452–1465.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109.
- Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research and Development*, 37(1), 58–71.
- Prinsloo, P., & Slade, S. (2017). Ethics and learning analytics: Charting the (un)charted. *British Journal of Educational Technology*, 48(1), 39–52.
- Siemens, G., & Long, P. (2011). Penetrating the fog: Analytics in learning and education. *EDUCAUSE Review*, 46(5), 30–40.
- Thomas, L. (2012). Building student engagement and belonging in higher education at a time of change. London, England: Paul Hamlyn Foundation.