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Increasing Student Success across Faculties through an Immersive Block Model: An Australian Case Study of Innovative Teaching and Learning

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Abstract

Globally, higher education (HE) providers are exploring ways to adapt their education delivery approach in light of changing student demographics and shifting learner preferences. This paper presents 2023 results from a whole-of-institution curriculum reform project at a comprehensive, public Australian university, where traditional semesters were replaced with an innovative 6-week immersive block model. The submission describes the model, then assesses the effectiveness of the immersive block model on improving student learning outcomes across five faculties and two colleges, through comparing pre-COVD, traditional model 2019 student performance data with 2023 results from the first full year of implementation. The analysis demonstrates increased: pass rates (70.6% to 88.1%); and, Grade Point Averages (3.72 to 4.60). Implications for practice at HE institutions considering curriculum reform are discussed.

Keywords: *curriculum reform; curriculum innovation; block model; immersive scheduling; active learning; student success*

1. Introduction

Over the preceding five decades, there has been substantial growth in higher education (HE) enrolments globally. Initiatives to enhance HE participation and accessibility for a broader demographic have increased the number of students participating in HE who are typically underrepresented, including students from low socio-economic areas, students registered with a disability, and part-time students with work commitments (Stone, 2022). This can be seen in anglophone countries like Australia, the United Kingdom (UK), and the United States (US), but also in nations across Europe (Weedon & Riddell, 2016). However, while diversity has

improved, disparate achievement outcomes in terms of pass rates exist across student cohorts; addressing this gap is a pressing challenge (Marginson, 2016).

Curriculum reform has emerged as a key driver to address the challenges accompanying student population heterogeneity. Curriculum reform emphasizes the power of evidence-based approaches to pedagogy, content, and assessment to improve student achievement (Woelert et al., 2022). Interest in curriculum reform is also driven by the post-pandemic student demand for more flexible learning experiences (Fishman et al., 2022). One type of reform that HE providers are turning to is the immersive block model (Roche et al., 2022).

1.1 Literature Review: Curriculum Reform and Immersive Block Models

Immersive block models are a non-traditional form of HE delivery that aim to enable greater levels of focus, and in turn better support the academic success of diverse HE cohorts (Roche et al., 2023, 2024; Turner et al., 2021). Immersive blocks models involve single subjects studied over shorter teaching periods of 4-6 weeks, differing from conventional 12-15 week semesters (Samarawickrema et al., 2022). They are typically underpinned by active learning pedagogy. Active learning has long been recognized for its efficacy in elementary, secondary, and higher education (Wilson et al., 2023), improving students' . Studies assessing active learning's impact in HE contexts demonstrate improved: knowledge retention and retrieval (Karpicke et al., 2009); real-world problem-solving skills (Crouch & Mazur, 2001); and, student achievement (Freeman et al., 2014).

Literature on immersive block learning has grown in recent years as more institutions experimented with non-traditional teaching models during and post the COVID-19 pandemic (Buck & Tyrrell, 2022; Goode et al., 2023a, 2023b; Loton et al., 2022; Turner et al., 2021). Studies suggest that immersive block models can significantly improve student academic success, especially for pathway education (Goode et al., 2024b), first-year undergraduates (Buck & Tyrrell, 2022; Loton et al., 2022), international students (Goode et al., 2024a), and those from equity groups (Roche et al., 2023). However, questions have been raised in regard to its appropriacy across disciplines and faculties (Konjarski et al., 2023).

This paper contributes to the literature by providing insights into a large-scale curriculum reform spanning multiple faculties at a HE institution. The study addresses the research question: How has an immersive block model underpinned by active learning pedagogy affected the academic success of students in different faculties?

2. The study

2.1. Context

The analysis presented in this paper reports on the Southern Cross Model (SCM), an immersive block curriculum model (Roche et al., 2022, 2024). The SCM is situated within an Australian regional public institution with an enrolment of approximately 19,000 students spanning five faculties, two colleges, and diverse disciplinary areas such as health, science, engineering, laws, business, information technology, education, Indigenous knowledge, and the arts. It is of note that only 25% of the student body secures admission based on high school results, with up to 60% being first-generation university students. Additionally, 40% of enrolled students reside in regional or remote Australia, 40% pursue their studies online, and close to 5% identify as Indigenous – Aboriginal and/or Torres Strait Islander (Roche et al., 2023). These characteristics have remained principally the same over the period of this study.

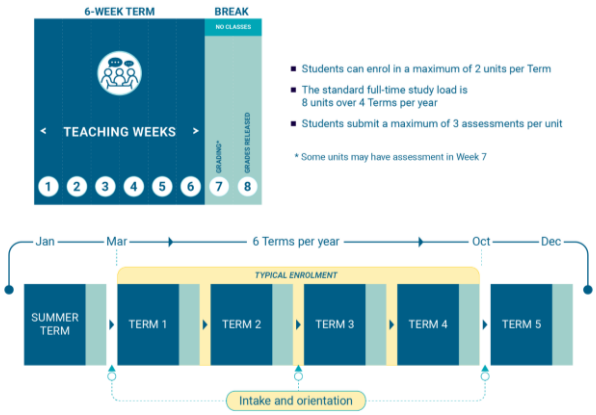

Figure 1. Teaching Terms in the Southern Cross Model. Source: Goode et al., 2023a.

The SCM reconfigures the academic calendar, dividing it into six, six-week terms, each requiring a full-time commitment to two units (refer to Figure 1). A standard full-time enrolment spans four terms (1-4) annually with the majority of students taking Term 5 and Summer Term off. The units in the SCM are designed to match their counterparts in the traditional model in terms of both the learning volume and the learning outcomes. Consequently, a typical student, throughout a calendar year, accomplishes an equivalent number of credit points within the same overall timeframe as in the traditional model.

The SCM required modifications to teaching, learning, and assessment policies and procedures with the intention of enhancing students' learning experiences through a more uniform, interactive, and learner-centric instructional approach throughout the institution (Roche et al., 2024). Institutional policy operationalizes each of these principles across three primary forms of learning: 1) **Self-access online modules** featuring media-rich, interactive content that is

responsive and offers students regular practice and feedback opportunities; 2) **Scheduled classes** characterized by guidance and interactivity, involving tasks like problem-based scenarios, discussions, and simulations, with an exclusion of lectures; and, 3) **Authentic and manageable assessments**, restricted to a maximum of three tasks scaffolded across a unit. The curriculum reform required significant change to institutional policies related to assessment, teaching and learning across core functions: e.g. Assessment, Teaching and Learning Policy - replace lectures with interactive workshops, cap number of assessments per unit at 3, limit use of examinations, new assessment moderation guidelines (for a discussion of these see Roche et al., 2024). The model was piloted in limited courses in 2021 (Goode, et al., 2023) and then implemented in further courses in 2022 (Wilson et al., 2023), with all faculties and colleges moving to the SCM in 2023.

2. Methodology

This study employs a quantitative retrospective observational methodology to explore the impact of the Southern Cross Model on student academic success at the host institution. The study was approved by the institution's Human Research Ethics Committee, approval number 2022/054.

The study drew on student outcomes across all faculties and colleges in the SCM, including two years of achievement (success) data from units that transitioned to the immersive block model in 2023. Data were prepared by the University's Business Intelligence and Quality work unit and are presented through an institutional dashboard.

Measures of student achievement used in this paper are success (pass) rate and grade point average (GPA). Success rates were calculated as the proportion of unit completions from unit attempts i.e., success rate = Completed / (Completed + Failed + Withdrawn). GPA is a numerical calculation that summarizes students' academic performance during a period of study. GPA = Sum of (Grade Point × Credit Points) ÷ Sum of (Credit Points). As is common in Australian HE, GPAs are reported on a seven-point scale: High Distinction = 7; Distinction = 6; Credit = 5; Pass = 4; Fail; Absent Fail; Withdrawn Fail = 0. Withdrawn grades are not used in GPA calculations.

2. Results

Figure 2 shows the success rates in the pre-COVID year of 2019 to the first year of full implementation 2023. The graphs represent student success rates calculated from grades in 2019 (N= 51,625) and 2023 (N= 62,40). The mean success rate in the traditional model in 2019 was 70.6% (95% CI 69.11%-72.04%). The mean success rate in the immersive block model was 88.1% (CI 87.3%-88.8%); the result is therefore statistically significant at $p < .05$.

Figure 3 displays the Grade Point Averages (GPA)s in years from pre-COVID 2019, then compared with 2023, the first year where all faculties and colleges were delivering in the Southern Cross Model. The mean GPA in the traditional model in 2019 was 3.72 (95% CI 3.62-3.81). The mean GPA in the immersive block model was 4.6 (CI 4.54-4.65); the result is therefore statistically significant at $p < .05$.

The acronyms per faculty are: EPB (Educational Partnerships Board); FBLA (Faculty of Business, Law and Arts); FOE (Faculty of Education); FOH (Faculty of Health); FSE (Faculty of Science); Gnibi (College of Indigenous Australian Peoples); SCU Coll (SCU College – pathways programs).

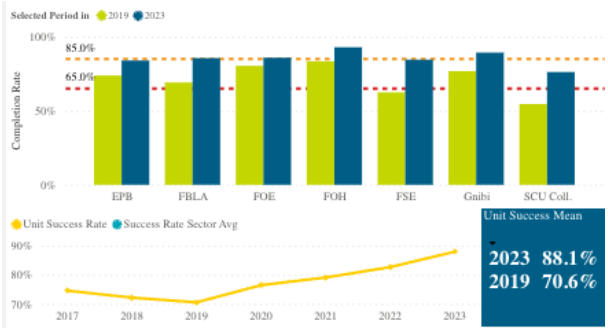

Figure 2. Unit Success Rates 2019 compared with 2023. Source: Institutional Dashboard (2024).

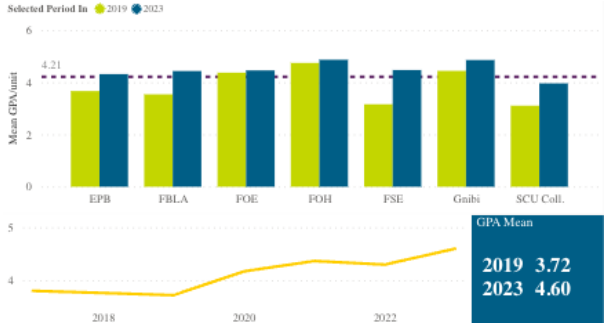

Figure 3. Mean GPA 2019 compared with 2023. Source: Institutional Dashboard (2024).

3. Discussion

This paper has reported on the outcomes of a whole-of-institution curriculum reform at a comprehensive public university in Australia, where a conventional semester model, characterized by learning four units simultaneously, lectures, and examinations, was replaced with an immersive block model grounded in active learning pedagogy. Given the large, complex nature of this innovative curriculum change and its recent implementation, the overarching

research objective here was to offer insights into the impact of this delivery model on student achievement at scale, spanning faculties and colleges.

Notably, the implementation of the immersive block model appears to have significantly enhanced the academic success of undergraduate students as measured by both success rate and GPA. This positive impact is observed for the University as a whole and across faculties and colleges, including disciplines in business, arts, law, education, health, science, engineering, tourism, and Indigenous knowledges. It is of note that this is an observational study without control groups so the findings must be understood in light of this limitation. Further work by the research team will consider comparisons using control groups over time, and interviews with students who experienced the curriculum change, to improve our understanding of whether the improvements in the grades can be confidently attributed to the model. The current study provides promising evidence supporting the growing body of work suggesting that shorter, more focused, and active learning delivery models effectively improve student achievement in HE (Buck & Tyrrell, 2022; Goode et al., 2023a; Loton et al., 2022; Turner et al., 2021). These findings hold relevance in a post-COVID era, as institutions serve increasing numbers of underrepresented students (Stone, 2022).

Variations in impact were observed across faculty groupings, with FBLA (business, law and arts), and FSE (science, engineering and IT) experiencing a strong positive impact on student achievement in the immersive block model. Smaller gains were noticeable in FOE (education), EPB (tourism), and Gnibi (Indigenous knowledge). It is of note that FOE already exhibited high performance in the traditional model. The data further suggest that the immersive block model has provided valuable "transition support" for novice higher education students – those studying here through SCU College offering pathways. Exploring the variability of improvement across faculties or considering the challenges of implementing a whole-of-institution curriculum reform is beyond the scope of the current paper, though drivers of variable improvement, such as staff negotiation and adoption of curriculum models, are explored elsewhere by the authors (Roche et al., 2024).

4. Conclusion

The innovative, whole-of-institution curriculum transformation explored in this paper departs from traditional university learning based on semesters, lectures, and exams. Immersive block models involving two units of study at a time over shorter teaching periods, and underpinned by active learning pedagogy, can deliver improved outcomes across faculties to support increasingly diverse student populations in today's world of changing HE.

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