Decline of student engagement in online studies: Understanding the trend

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This research in progress examines student engagement in online synchronous learning sessions, focusing on trends from extended lockdowns during the COVID-19 pandemic to the present day within a higher education pathways subject. While our longitudinal data provides insights into declining student engagement trends, the reliance on chat messages within online synchronous sessions as the primary measure of engagement may only partially capture the multifaceted nature of student engagement. By re-examining the student engagement model by Kahu, we identified a possible direct link with student structural factors as influences on student engagement. As a result, we propose a model representation that further emphasises the interrelated influences of multiple dimensions of student engagement. The next phase of this study is to develop a broader range of engagement metrics, including direct feedback from students, which is expected to provide a better understanding of student engagement trends.

Keywords: online engagement, synchronous learning, student engagement, LMS analytics, trend analysis

Introduction

Student engagement has been at the centre of the scholarship of teaching and learning for many decades. It is a critical factor influencing achievement and learning in higher education. Engaged students are more likely to be academically successful, experience a sense of belonging, and achieve immediate and long-term educational outcomes (Cents-Boonstra et al., 2021). Importantly, student engagement is considered an indirect reflection of educational quality, with higher engagement levels correlating with better student satisfaction and higher academic performance (Krause & Coates, 2008).

Online and blended learning have become prevalent in higher education. These modalities offer numerous benefits, including enhanced learner interdependence and flexible pacing (Paudel, 2021). When the COVID-19 pandemic forced many institutions to rapidly shift to online learning, academics had to adapt their curricula and teaching strategies to digital platforms without sufficient training on pedagogical aspects of such shifts (Ferrer et al., 2022). In online learning, limited social interaction creates a feeling of isolation, disconnection and disincentivise participation (Kinzie, 2023). To mitigate this problem, there is an even stronger need to be dynamic and entertaining during synchronous online sessions to enhance student emotional engagement while carefully planning synchronous activities (Heilporn et al., 2021). Student engagement, particularly in an online context, has become a critical area of focus as many courses have maintained aspects of online learning in a post-COVID world.

Reflecting on various aspects of engagement described in research literature, Kahu (2013) proposed a model offering a holistic framework for understanding the multifaceted nature of student engagement in higher education (Figure 1). Kahu's (2013) model integrates behavioural, psychological, and sociocultural perspectives of student engagement and explains the antecedents (structural and psychosocial influences) in addition to the proximal and distal consequences of student engagement. This model is most applicable in this study as

the primary conceptual framework due to its comprehensive approach to understanding how wider sociocultural contexts influence student engagement within the educational context. Furthermore, Kahu's model recognises the need for further study into specific student populations and cohorts. Thus, we propose that this framework is a useful lens for understanding the multifaceted factors that influence student engagement and avenues for targeting interventions aimed at increasing student engagement, which is explored in this study examining an online blended delivery of a pathways subject.
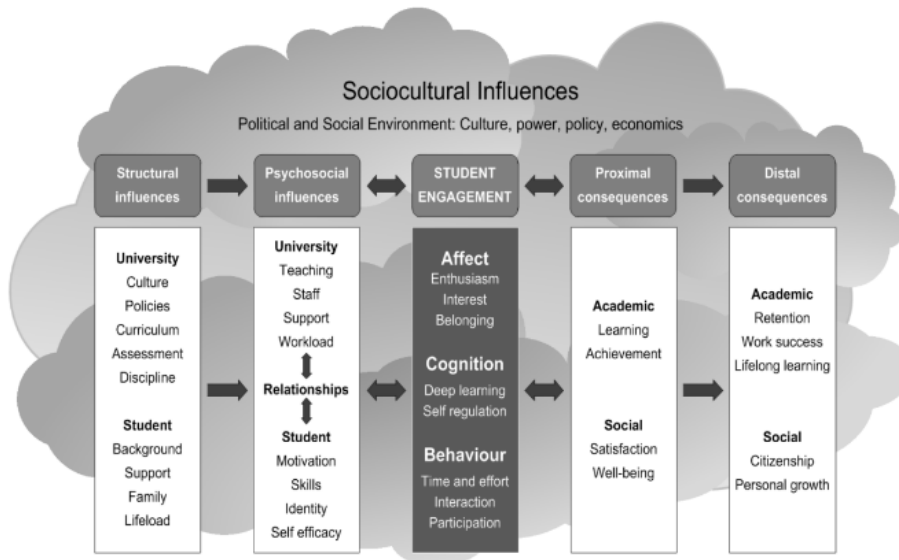

Figure 1. Conceptual framework of engagement, antecedents, and consequences (Kahu, 2013, p.12)

One approach for measuring and tracking student engagement in the online environment is leveraging the administrative log data collected by the learning management system (LMS). LMS analytics, including "Last Activity" (the last time a user accessed the LMS) or "Total Activity" (the total time a user has spent on the LMS) can be easily extracted and assessed by teaching staff. Therefore, LMS data can be effectively used to measure student engagement (Wang, 2017). However, these parameters have significant limitations. For example, the time spent on an LMS page does not always reflect active engagement or meaningful participation. Also, LMS analytics do not capture engagement in activities performed outside the LMS. As a result, we propose a more direct student engagement metric, i.e., participation in class discussions via chat messages, which provides better representation of student engagement in online synchronous sessions.

This study focuses only on online synchronous learning activities within the blended learning delivery model. Specifically, this study examines the social aspects of collaborative learning, a key component of the behavioural perspective of student engagement. The study investigates a very specific student cohort: pathways students whose achievement did not qualify them for their preferred Bachelor program. By measuring active participation in discussions and interaction with peers within an online synchronous class setting, this research in progress aims to provide preliminary insights into student engagement based on the student engagement model by Kahu (2013).

Teaching context and Research approach

The investigated subject is a university pathway unit that runs over 12 weeks. It is part of the course that is targeting students who did not complete high school in Australia, or those who did not get the ATAR score required for their preferred bachelor's degree. Students are offered pathways with extra support and guidance from teaching staff through smaller class sizes and greater capacity for individualised learning. Two hours of scheduled activities are run synchronously online in Collaborate Ultra. Other offline scheduled activities

involve two 2-hour face-to-face classes. An exception applies to the 2021 teaching period (TP) 3, when all scheduled unit activities were run online due to the COVID-19 lockdown within the Melbourne area.

Academic analytics is a way of using educational data collected by LMS to analyse students' progress and intervene before students fall significantly behind (Campbell et al., 2007). This study examined analytics collected by the LMS plug-in, Collaborate Ultra, where synchronous online sessions are scheduled. The data was extracted from all available Canvas subjects delivered between TP3 2021 (which was significantly impacted by COVID lockdown) and TP1 2024. Only classes from weeks 1-11 were retained in the analysis, as week 12 online synchronous activities involve unit revision and do not involve chat interactions. To ensure the focus on student engagement, any chat messages from teaching staff were removed from the data before analysis. This approach allowed for a clearer assessment of student interactions and engagement trends over this timeframe. Table 1 depicts the number of enrolled students per TP. However, as shown in Figure 2, there were online classes that were not attended by students and, as a result, display zero chat participation.

Table 1.
Number of Students Enrolled in the Pathways Subject Used for Analysis (Final Enrolment Numbers)

	2021, TP3	2022, TP1	2022, TP2	2022, TP3	2023, TP1	2023, TP2	2023, TP3	2024, TP1	Total
N	19	65	24	29	80	26	19	60	322

As student enrolment numbers fluctuate throughout the year, Figure 2 illustrates the percentage of students who post at least one chat message during each synchronous online lecture session in Collaborate Ultra. The trends observed in Figure 2 indicate a decline in the percentage of students posting at least one chat message during synchronous sessions, both within individual teaching periods and across multiple teaching periods.
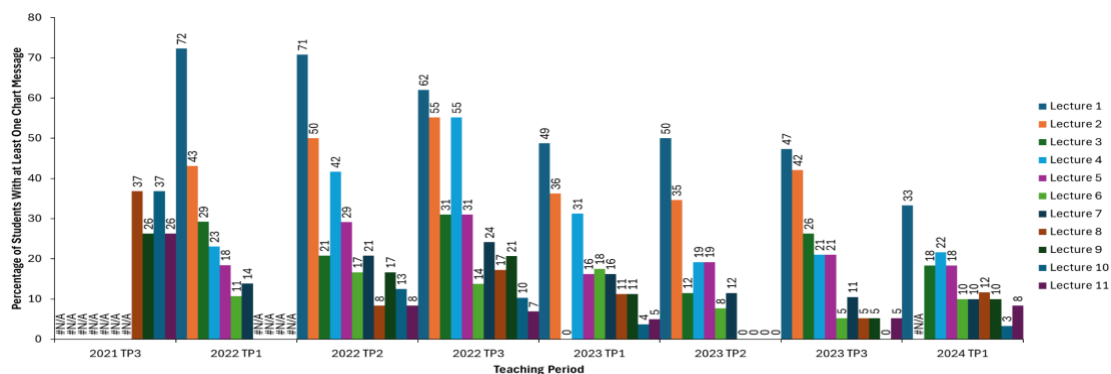

Figure 2. Percentage of students (relative to final enrolment numbers) within each online lecture who posted at least one chat message over time. #N/A means data was not available

Our trend analysis reveals a clear decline in student engagement within synchronous online sessions over time, as evidenced by the decreasing percentage of students posting chat messages during lectures (Figure 2). This trend is consistent across individual teaching periods and over multiple periods. There are multiple possible factors contributing to this decline. One explanation is that the initial novelty and motivation for online learning has diminished with time. There is also the increasing prevalence of external distractions and responsibilities of students, particularly in a post-pandemic context (Hews et al., 2022). Specifically, the economic pressure for students to work while studying is a possible external detractor from engagement. This observation provides evidence for the link between structural factors affecting student engagement as the time period reflecting the largest decline in student engagement from 2023, TP1 to 2024 TP1 was marked by substantial external pressures within the global economy and high cost of living (Neves et al., 2024). Another consideration is the potential impact of online learning fatigue, where prolonged exposure to online formats

may result in reduced enthusiasm and participation (Chen & Qin, 2023). These trends highlight the need for implementing online engagement strategies and interventions to re-engage students and enhance their online learning experiences within the subjects.

Discussion and Conclusion

The study analyses the decreasing engagement trends through the lens of the conceptual model of student engagement proposed by Kahu (2013). Our results indicate a decline in student engagement during online synchronous lecture sessions, with less than half participating in the first week of the most recent teaching period. The data indicates that online synchronous study may not be suitable for the cohort of pathways students, who typically lack strong academic skills and motivation to study. Importantly, it has been noted that learner levels must be considered when incorporating synchronous online learning activities, with better outcomes shown for more experienced learners (Martin et al., 2021). These students likely require more of individual attention and guidance from teaching staff, which is much harder to provide in the online mode.

Kahu's model highlights the importance of psychosocial influences such as motivation, self-efficacy and identity as important factors that influence student engagement. In our study, the lack of strong academic skills, motivation and effective study behaviours suggests that these psychosocial factors may not be sufficiently developed to support engagement in an online synchronous environment.

We examined aspects of student engagement which were not clearly reflected in the Kahu's (2013) model to further emphasise the impact of multiple dimensions of student engagement and their interrelated influences. We chose to represent our proposed model (Figure 3) as a cog system to highlight the interconnected and dynamic nature of the factors considered to influence student engagement. The student engagement cog, being the central focus of the model, represents students' affect, cognition and behavioural engagement in their learning process (same as in Kahu's (2013) model). Psychosocial and structural influences were combined into a separate cog, which feeds into the central cog of student engagement by shaping the environment and context in which student engagement occurs. *Psychosocial* influences include student related factors (motivation, skills, identity and self-efficacy) and university related factors (teaching, services, support and staff), and the relationships between them. *Structural* influences refer to university processes, (culture, policy, curriculum, assessment) and student factors (background, family and lifeload). Finally, there is the cog of proximal and distal consequences, which represent the outcomes of student engagement, both short-term *proximal* consequences (learning and achievement) and long-term *distal* consequences (academic retention, success in work, lifelong learning, citizenship and personal growth). The feedback loops indicated by the arrows represent the continuous interaction between these factors, emphasising that changes in one cog will feed back into the system and cause changes to other cogs in the model, thereby influencing the entire system.
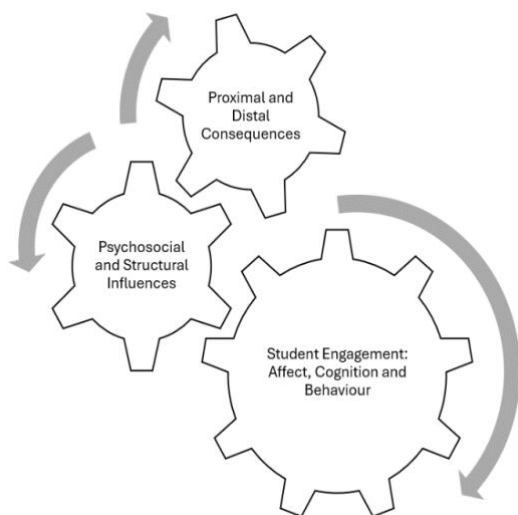
Figure 1. Proposed representation of the student engagement and its influencing factors.

Based on the proposed representation of student engagement and influencing factors, it is recommended to tailor activities to the diverse backgrounds and needs of students. This finding is in line with the past studies, e.g. a study focusing on linguistically diverse students (de Kleine & Lawton, 2015) which is similar to the cohort that this study analysed. Additionally, it is important to prioritise university policies and procedures that incorporate student feedback. This finding is new as this approach does not have much coverage in the past research. These strategies are particularly useful in pathways subjects, where students often aim to continue into Bachelor

programs. This method aids students in gradually adapting to the higher education environment and increasing academic expectations. By acknowledging and addressing the unique challenges students face, higher education institutions can better foster active participation, collaboration, and academic success.

Our proposed model emphasises the multifaceted and complex nature of student engagement as being also influenced by student and university structural factors. As a continuation of this study, we propose two directions for future research: to incorporate qualitative accounts from students to understand the reasons for declining engagement in synchronous online lectures and to develop a broader range of engagement metrics, including qualitative assessments and direct feedback from students, which is expected to provide a better understanding of student engagement trends.

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