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EDITED BY

Marc Aurel Schnabel,
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REVIEWED BY

Pinaki Chakraborty,
Netaji Subhas University of Technology, India

*CORRESPONDENCE

Patsie Polly
✉ patsie.polly@unsw.edu.au

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Disrupted student engagement and motivation: observations from online and face-to-face university learning environments

Manisha Hari Rajan^{1,2,3}, Cristan Herbert^{1,2,3} and Patsie Polly^{1,2,3*}

¹Digital and Immersive Education Research Group, School of Biomedical Sciences, Faculty of Medicine and Health, University of New South Wales, Sydney, NSW, Australia, ²Mechanisms of Disease and Translational Research, Faculty of Medicine and Health, School of Biomedical Sciences, University of New South Wales, Sydney, NSW, Australia, ³Department of Pathology, Faculty of Medicine and Health, School of Biomedical Sciences, University of New South Wales, Sydney, NSW, Australia

Student engagement is a crucial factor that can influence both the student learning experience and student success. The return to campus learning and teaching after the pandemic highlighted that many university students are still adapting to the shift to full-time online learning from hybrid or full-time on-campus learning and are still experiencing feelings of isolation, anxiety, and uncertainty. As higher education institutions adopt or embed digital methods of teaching and learning with simultaneously moving back to face-to-face learning environments, student feelings of isolation and disengagement are apparent to educators. This “transition,” in our opinion, has affected how learners engage in digital as well as face-to-face environments. Previous studies have highlighted the importance of engagement within an online setting as it brings about new factors for student learning and teaching that were not fully considered before. To address this issue, universities have sharpened the focus on improving student motivation, self-efficacy, and their sense of belonging within their learning community. As educators, it is important for us to understand this period of student disengagement and develop strategies to overcome and support students. We can acknowledge that such challenges are likely to resurface in the future; therefore, it is essential that we are able to provide frameworks to enhance student engagement within higher education. We believe that in creating an effective learning environment, whether it be online or on-campus, educators need to develop intrinsic motivation techniques and collaborative spaces to increase the sense of belonging for students and improve their overall engagement with their learning course content.

KEYWORDS

engagement, disengagement, motivation, virtual learning environment (VLE), higher/tertiary education, wellbeing, learning, online learning

1 Introduction

Student engagement is an important factor to address learning outcomes within tertiary education and is also believed to underpin student success and motivation (Kahn, 2014; Boulton et al., 2019). Engagement is believed to be the combination of both internal and external motivation along with the active commitment and purposeful effort that students apply toward all aspects of their learning (Krause and Coates, 2008). In recent years, our understanding of the nuanced effects that specific learning environments have on students has significantly advanced. As educators, it is crucial to understand the differences between online learning and the traditional face-to-face educational setting. The use of technology in facilitating remote or on-campus learning and teaching is referred to as “online learning and teaching.” Within tertiary education, universities employ a variety of online tools, ranging from online lectures and modules to interactive virtual classrooms. However, our understanding of face-to-face learning is characterized by the physical presence on campus and active participation in lectures and tutorials as well as immersion within the on-campus community. Previous studies have shown that student engagement is related to success both in online learning (Zhu, 2006; Dumford and Miller, 2018; Wong and Raheem, 2020; Chiu, 2021; Daniels et al., 2021) and, more commonly, within traditional face-to-face learning on-campus (Boulton et al., 2019).

It is essential to understand the factors that have contributed to student disengagement during both the pre- and post-COVID-19 eras. As university education delivered online became the main mode of learning during the pandemic, student intrinsic and extrinsic motivations and the way students engage with content have changed significantly. Although student engagement within higher education has been an area of interest pre-COVID-19, a current predominant issue that recent studies aim to address is the gap in knowledge to target and improve student engagement after the “COVID-19 learning disruption,” as education delivery has changed dramatically (Mukhtar et al., 2020; Daniels et al., 2021; Rincon-Flores et al., 2022). Online learning environments have been reported to make it difficult for students to stay motivated and engaged with their learning content, thereby creating a struggle to stay up to date with coursework and achieve their learning outcomes (Chiu, 2021). While there are studies targeting online education and methods to improve virtual learning environments (VLEs) to aid student learning, a major area that needs to be addressed and is currently becoming an area of importance is student engagement, motivation, and wellbeing (Boulton et al., 2019; Hews et al., 2022). Many educators would also agree that the pandemic has made it clear that many students can feel disengaged within their learning space, be it online or face-to-face. Taking steps to address this issue at present will help us be better prepared to handle similar challenges in the future.

Although we know student engagement is a fundamental aspect of a successful learning experience, measuring engagement levels can be difficult due to the many variables that exist within an online or face-to-face environment. For example, within an online education setting, personal variables, such as a student’s sense of belonging and wellbeing, coupled with technical variables, such as access to equipment and services, can affect how student engagement is measured. Based on the previous literature, one of the main methods that can be used to measure online student engagement is the interaction that the student has within their VLE, whether it be a

simulation or a virtual campus. However, there is no current method that considers all the above-mentioned variables for effectively measuring student engagement within their online environment (Dumford and Miller, 2018; Boulton et al., 2019; Garris and Fleck, 2022). Similarly, a traditional face-to-face learning environment also has many “uncontrollable” variables that influence student engagement. It is a common observation that student wellbeing and their sense of belonging on-campus can impact their interactions in lectures, tutorials, and peer discussion groups, as well as interactions with educators and campus social life (Wang et al., 2014). Therefore, it is imperative to at least understand the factors that play a part in student engagement within a range of learning environments.

As tertiary institutions embrace a variety of learning approaches, including online, hybrid, and on-campus options, it becomes essential to create engagement strategies and adopt a holistic view of student motivations and wellbeing. We must also primarily consider that levels of engagement and factors that motivate students vary between individuals over the duration of their tertiary education and can affect how they choose to achieve their learning goals. The objective of this review is to highlight the changing learning environments and factors that influence student engagement and motivation and to understand how educators can create a learning environment that aims to promote a successful online or on-campus learning experience(s).

2 Levels of engagement within higher education pre- and post-COVID-19

Student disengagement has been used to describe the phenomena of educational exclusion, inequalities in educational completion and attainment in an institutional capacity, and an individual issue or a lack of interest from a psychological perspective (Branchu and Flaureau, 2022). As previously mentioned by Broccolichi (2000), progressive disinterest, or the loss of “connection” to education or the meaning of work, defines the concept of “cognitive disengagement.” The gradual increase in cognitive disengagement observed during the pre- versus post-COVID-19 era has become a global issue for higher education institutions that has resulted from behaviors and circumstances that are beyond student control (Branchu and Flaureau, 2022). The contrast in student engagement before and after the pandemic highlights the ever-shifting mindset of students regarding their attitude toward learning. This observation not only reflects the current situation but also carries implications for possible future scenarios where students could experience a heightened level of disengagement within their education.

During the pandemic, universities shifted their learning/teaching approach to an online format resulting in “learner disruption.” This educational shift intensified some of the existing inequities and vulnerabilities students experienced, such as lack of community, lack of a sense of belonging, or reduced confidence (Zepke et al., 2010; Eringfeld, 2020; Ossiannilsson, 2021; Bartolic et al., 2022).

Although online education was available prior to the pandemic, this sudden convergence to a wholly online learning system resulted in a range of novel experiences for students. These include behavioral perspectives, such as learner fatigue from adopting online learning, or the difficulty in acquiring appropriate hardware to use a range of online tools at home, which would result in changes in student behavior and would challenge student motivation and learning

(Mishra et al., 2020; Mukhtar et al., 2020; Neuwirth et al., 2020; Pather et al., 2020; Rajab et al., 2020; Colclasure et al., 2021; Daniels et al., 2021; Dodd et al., 2021; Baker et al., 2022; Bartolic et al., 2022; McLure et al., 2022). This is supported by further studies that have found student engagement or success online is affected by the ability of students to use or adopt technologies to facilitate learning and engage in behavioral practices that allow them to engage with their learning content. This included turning on their camera, unmuting the microphone to speak, and actively engaging in online class discussions (Sharma and Srivastava, 2019; Castelli and Sarvary, 2021; Granic, 2022; Sayaf et al., 2022). As a result, being uncomfortable with new technologies made students feel reluctant to participate in online classes, ask questions, or converse with educators or peers (Neuwirth et al., 2020; Banki, 2021; Hews et al., 2022). This resulted in students displaying disengaged behaviors, such as “attending” online classes but not engaging or being “absent” by turning the camera off, muting themselves, and not engaging in online class chats. All these actions or inactions have an effect on students not actively learning the course content or missing out on the nuanced nature of learning synchronously when online. In addition, the general reluctance of students to simply turn on their cameras was problematic as this action alone would reduce their motivation to fully participate in online classes (Castelli and Sarvary, 2021). This issue, coupled with “Zoom fatigue” marked by mental and physical exhaustion from continuous online classes, cognitive overload through video chats, a reduction in physical mobility, and visual overload contributed to situational disinterest and subsequent student disengagement (Ebner and Greenberg, 2020; Ramachandran, 2021).

In addition to the above-mentioned factors and their effect on student learning, the influence of new technologies and the “attention economy” proved to be problematic for teachers as they were competing for students’ attention in a world of physical and continually developing virtual distractions (Tai et al., 2019; Dontre, 2020; Flanigan and Babchuk, 2020; Banki, 2021). The concept of an attention economy highlights the compounding idea that attention is a scarce commodity within this current age, especially with students who are immersed in an online environment where distractions surround them (Mintzer, 2020). Given that engagement is critical for student success and an improved learning experience, higher education institutions, educators, and students are recognizing the urgency to update traditional modes of learning to overcome student attention span (Kahu, 2013; Kahu and Nelson, 2018; Lin and Eichelberger, 2020). As tertiary institutions continue to incorporate online and hybrid learning, it becomes vital to develop effective methods for sustaining student attention, a skill that is transferrable to traditional face-to-face classes.

Previous studies have supported the growing body of literature, demonstrating the pandemic as a sociocultural factor that has affected all the predominant areas of student engagement. Both the pandemic’s influence on higher education and the effects on mediating factors, such as student self-efficacy, emotions, sense of belonging, and wellbeing, have caused a disruption in student engagement (Chiu, 2021; Zapata-Cuervo et al., 2021; Hews et al., 2022). Based on student responses, the main factors that affected student engagement included competencies within new digital or virtual learning environments, self-efficacy, sense of belonging, wellbeing, teacher care and enthusiasm, and overall “lifeload”—which is defined as “the sum of all the pressures a student has in their life” (Kahu, 2013). Therefore, the

combination of developed personal factors and stressors during the pandemic contributed to a new understanding of students’ lack of engagement.

The current climate of higher education, whether it be online or on-campus learning, focuses on developing student engagement holistically. This approach is centered on student wellbeing and fostering a sense of belonging within their learning environment. As higher education institutions continue with hybrid learning and return to in-person classes, certain student behaviors that have developed during the pandemic have transitioned to the post-COVID-19 on-campus learning environment. However, beyond the context of the pandemic, the engagement shift not only encapsulates the present but also presents the possibility for potential changes in student disengagement patterns in the future.

3 A focus on student engagement, motivation, and wellbeing within tertiary education

3.1 Student engagement and motivation learning theories

One of the key methods to improve student learning and engagement is to increase their motivation within their learning environment. Learning paradigms, such as behaviorism, constructivism, and learner motivation, specifically look at the knowledge that has been developed due to behavioral responses to environmental stimuli (Shuell, 1986). Based on these paradigms, learning requires repetition and student motivation, provided by intrinsic and extrinsic factors (Tan and Nijholt, 2010; Lamb et al., 2020). Similar to learning paradigms, intrinsic factors focus on theories that aim to self-motivate students to learn. In contrast, extrinsic factors are external sources that can assist in improving learner motivation. To improve student engagement and motivation, theories used to help to improve intrinsic motivation can, in turn, enhance overall engagement in the learning content. When a student feels confident with the work they are producing, they are likely to stay focussed on their learning goals.

We believe that the following key theories are designed to enhance intrinsic motivation, placing an emphasis on the Cognitive Load Theory, Interest Theory, Self-Efficacy Theory, and Self-Determination Theory (Mayer, 2009; Makransky et al., 2019; Fiorella and Mayer, 2021). The cognitive load theory focuses on intrinsic cognitive load and outlines the way a learner can process material and move the material into their long-term memory or schema (Mayer, 2009; Fiorella and Mayer, 2021). This theory suggests that there are three types of learning that occur when a learner is presented with content during multimedia instruction: 1. extraneous processing, 2. essential processing, and 3. generative processing. When students are motivated to exert effort into learning, they are more likely to engage with essential and generative processing. Each theme focuses on identifying the relevant material and having the motivation to put effort into learning the content. Extraneous learning is a result of poor instructional design and can result in cognitively overloading students, resulting in an inadequate learning outcome (Mayer, 2009; Makransky et al., 2019). However, the interest theory, self-efficacy theory, and self-determination theory all focus on improving the intrinsic motivation

of the student by increasing their interest in learning and their confidence to complete a given task (Deci and Ryan, 2012; Renninger and Su, 2012; Renninger and Hidi, 2016; Ryan and Deci, 2016; Schunk and DiBenedetto, 2016). It is crucial to understand that a combination of the above-mentioned theories can work to improve the student learning experience by improving their intrinsic motivation. There is a correlation with improved intrinsic motivation that can result in an improved learning experience (Makransky et al., 2019). Although some factors that contribute to student wellbeing are uncontrollable, educators can work to improve student engagement by utilizing learning theories and methods to improve student motivation and eventually work on improving their wellbeing.

3.2 Educational interface framework and student wellbeing within higher education

The importance of student wellbeing to achieve academic outcomes and the relationship between wellbeing and engagement are areas of increasing interest, with the goal to develop future models to improve the learning experience (Bowden et al., 2019; Bowden, 2021). The concept of student wellbeing during their higher education focuses on student mental health as they go through university (Diener et al., 2017; Thorley, 2017; Boulton et al., 2019). A government report on student mental health and wellbeing in universities within the United Kingdom revealed that negative wellbeing factors, such as a reduced sense of belonging within their learning environment or a lack of intrinsic motivation to learn, had an effect on student performance and their course completion. In contrast, within the same report, students who reported having a positive wellbeing, which included factors such as a strong sense of self and self-efficacy and a sense of belonging and purpose within their educational setting, showed better academic performance (Thorley, 2017). Previous studies that analyzed student engagement and wellbeing within higher education primarily utilized survey data that were administered either at the beginning or at the end of the university term or semester. Analysis of survey data administered to the student cohort, or focus groups, helped educators to gain insights into current student perceptions of learning and provided an idea of student wellbeing and the level of engagement students had within the given course (Boulton et al., 2019; Chiu, 2021; Bartolic et al., 2022; Branchu and Flaureau, 2022; Garris and Fleck, 2022). Therefore, by obtaining such data, educators can deeply understand the complexity of student needs and identify how to deliver an optimal learning and teaching experience.

The global shift to online learning presented the opportunity to understand the influences of student engagement (Hews et al., 2022; Rodrigo et al., 2022). An educational interface framework reported by Kahu and Nelson (2018) explained how the shift to online education affected students' perceptions of learning and engagement (Kahu and Nelson, 2018). The framework highlighted specific psychosocial constructs, such as self-efficacy, emotions, belonging, and wellbeing, which are critical mechanisms for mediating interactions between students and their institution, and engagement and success (Kahu and Nelson, 2018). The constructs can be defined as follows: self-efficacy is the belief an individual has in their own capacity to complete a task; emotions result from the student's evaluation of their situation within their educational environment;

belonging is the connectedness to the situation presented to the student; and wellbeing is an individualistic balance of "lifeload" and stress (Kahu and Nelson, 2018; Partington, 2020; Hews et al., 2022). One of the most significant connections found was the link between students' personal lives and their university experiences, and the correlation this link had with their engagement throughout their education (Hews et al., 2022). Students were more likely to prioritize their "lifeload," which included their emotions and wellbeing, over their learning load, despite knowing the choices that they made would have a negative effect on their learning.

4 Core factors for student engagement: self-efficacy, lifeload, and a sense of belonging

4.1 Self-efficacy

As mentioned previously, a student's sense of self-efficacy is their own belief that they can complete a task. The self-efficacy theory is based on the idea that learners will try harder when they believe they can succeed in a task, hence increasing their motivation. Learners who have high self-efficacy about education should be more capable of engaging in self-regulated or self-directed learning, including setting goals and using effective learning strategies (Bandura, 1977; Schunk, 2012; Schunk and DiBenedetto, 2016). When a student displays higher levels of self-efficacy, they can more easily adapt to their changing learning environment. For example, the move to online learning has provided increased flexibility, which has been recognized as a positive outcome of learning during the pandemic (Martin, 2020; Martin and Furiy, 2020; Rajab et al., 2020). The benefits of online learning were felt most strongly by participants who classified themselves as having a higher sense of self-efficacy and described themselves as intrinsically motivated (Hews et al., 2022). However, students who displayed lower levels of self-efficacy would not feel confident in their ability to learn independently. Students who typically felt this way expressed a preference for a highly structured and facilitated process of face-to-face learning. If they experienced reduced contact or connection to peers and educators, it reduced their motivation and incentive to engage (Kahu, 2013; Kahu and Nelson, 2018).

4.2 Sense of belonging

In combination with self-efficacy, having a sense of belonging within the university means to feel valued and accepted, which, in turn, would have a positive effect on student mentality toward learning. However, a student's lack of belonging can be enhanced if they have reduced interaction with teaching staff and peers. The unexpected loss of campus culture deprived students' sense of connectedness to their tertiary institution and diminished their sense of belonging. This issue in combination with feelings of isolation and uncertainty can further exacerbate their emotions and wellbeing (Pedler et al., 2021; Hews et al., 2022). Survey data revealed that students who typically display a higher sense of belonging also have higher intrinsic motivations to learn (Pedler et al., 2021). This value is observed in students who are in the later years of their higher

education as a sense of belonging is crucial for students to develop during their early years of higher education. Additional research is required on the sense of belonging among students in higher education to understand its role in student motivation, engagement, and improved learning experiences (Freeman et al., 2007; Pedler et al., 2021; Hews et al., 2022).

4.3 Lifeload

Self-efficacy and a sense of belonging are emotional factors that are of importance for student engagement and motivation. Pandemic-related stressors or a “lifeload,” including economic, employment, family, social, or health pressures, that students would experience, in turn, would result in emotions related to anxiety and negatively affected engagement. This issue coincided with and resulted in a change to forced online learning, a combination that has been demonstrated to lead to reduced wellbeing (Bartolic et al., 2022; Guppy et al., 2022; Hews et al., 2022; Rodrigo et al., 2022). These lifeload stressors in combination with emotions such as a sense of belonging would take a toll on student mental health, which would result in lifeload triumphing “learning load.” This disruption in learning also causes disruptions in motivation and engagement (Kahu and Nelson, 2018). In contrast, some students have found the shift to online learning positive as it allowed them to develop a positive coping strategy (Baker et al., 2022). However, this is typically seen in students who have high self-efficacy and a sense of belonging (Freire et al., 2021).

A significant finding from previous literature was the imbalance between student knowledge of how they learn best compared with how they chose to learn. For example, students would prioritize their lifeload over their learning load, even if it meant neglecting their learning (Darling-Hammond et al., 2019; Hews et al., 2022). Students are aware of the benefits of synchronous learning compared to asynchronous learning, yet student lifeload would take precedence and would result in students choosing asynchronous learning. This could be due to the flexible online learning or reduced engagement levels due to a lack of belonging (Hews et al., 2022).

Educators have the responsibility to create future learning models that can adapt to the changing motivations and priorities of students. Factors such as a student’s lifeload, wellbeing, accessibility to equipment and collaborative tools, and education to improve their technological skills are some areas that need to be considered during this current period to create an enjoyable learning experience. However, in navigating the evolving needs of students, there is no established method to gauge a precise level of improvement across the mentioned parameters apart from utilizing surveys and focus groups and relying on student self-reporting.

Despite this, previous literature has helped to identify the predominant issues students face that affect their engagement, outlining the main areas where educators can focus their attention to improve future learning models. This outline includes (1) methods to improve a student’s sense of belonging, such as (i) hybrid learning/digital environments, and on-campus learning space re-designed to allow easy student collaboration for online and in-person learning; (ii) flexible learning; and (iii) teacher care and enthusiasm, and (2) addressing the reality of student lifeload. It is theorized that these four

areas are key to allow for improved learning post-COVID-19 (Kahu and Nelson, 2018; Hews et al., 2022).

5 Conclusion and the future of student engagement within tertiary education

The current realm of higher education institutions needs to develop methods and strategies to target a holistic approach to teach students whether it be online or face-to-face, as students have now experienced a life of learning that has been isolated from peer and educator interaction, as well as experiencing campus culture. Educators now have the responsibility to design future learning models with the goal of being inclusive of student wellbeing, enhancing their sense of belonging within their learning space, and encouraging broader interaction among other educators, students, and their peers, which, in turn, could improve a student’s sense of belonging as they would feel more supported and have access to resources that can support their skill development. An additional avenue for future research would be to explore the relationship between student belonging and motivation and how these factors combine to influence student achievement and success. On top of the inclusivity that educators will have to promote, it is also essential for teachers to recognize that online or face-to-face learning should offer students a blended approach that seamlessly integrates aspects of in-person and virtual learning environments.

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