



Student Mental Health and Well-being vs. Academic Success: A Literature Survey

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Abstract

Student mental health and well-being are growing concerns in higher education, significantly impacting academic performance, classroom engagement, and retention. This mixed-methods study examines how structural factors—such as financial hardship, environmental stressors, and social pressures—affect student well-being. Understanding these dynamics is crucial for creating effective educational environments, particularly in the context of technology-supported and blended learning. The COVID-19 pandemic and the rise of hybrid learning profoundly influenced student mental health, exacerbating inequities and increasing service utilization. Beyond synthesizing existing literature, this study presents primary empirical data, revealing a strong correlation between student well-being factors (preparedness for class, emotional well-being, and course comfort) and academic achievement. We evaluate strategies like inclusive curriculum design, peer-led wellness initiatives, digital mental health tools, and Universal Design for Learning (UDL) to propose a multidimensional framework for improving student outcomes. This integrated approach analyzes both existing literature and empirical data to understand challenges and opportunities in addressing student well-being within technology-supported classrooms. It serves as a critical first step for integrating well-being into Computer-Supported Agile Teaching (CSAT). Ultimately, this review concludes that holistic approaches combining pedagogical reform, mental health infrastructure, and technological innovation are essential for fostering academic success and long-term student well-being.

Keywords: academic success, educational technology, equity pedagogy, student mental health, well-being

1. Introduction

The field of education continually evolves to meet student needs, a process significantly accelerated by the recent pandemic. A key focus within this evolution is understanding diverse student requirements, as factors like race, socioeconomic status, depression, anxiety, and burnout profoundly affect learning experiences. This underscores the importance of

creating inclusive and supportive environments, making equity pedagogy—teaching methods designed to ensure equitable learning—crucial.

The increasing role of technology, particularly since the COVID-19 lockdown, has revolutionized learning environments, integrating online classrooms and virtual meetings (Cao et al., 2020). What began as a necessity has become a standard, supporting both in-person and hybrid instruction. Moving forward, the blended teaching mode, combining face-to-face and online learning, offers greater flexibility, personalized experiences, and high-quality outcomes in higher education. Beyond enhancing resource and learning access, the focus is shifting to how technology can support mental health, addressing challenges like depression, anxiety, isolation, and burnout, while accommodating diverse learners from various racial and socioeconomic backgrounds. The pandemic-driven shift highlighted the critical need for flexible, supportive learning environments that prioritize students' academic and emotional needs across all modalities.

As such, the evolving landscape of 21st-century education necessitates continuous exploration of technology-supported teaching and learning practices. Our research examines interactive, technology-supported pedagogical approaches through the framework of Computer-Supported Agile Teaching (CSAT) (Tarimo, 2016). CSAT aims to bridge the gap between educational research and classroom practice by equipping educators with technological tools for effective, interactive, student-centered pedagogies. Crucially, effective student-centered pedagogy must support the well-being and equity of all individual students, including their mental health. This paper establishes the foundation for how student mental health and well-being can be integrated within technology-supported teaching frameworks like CSAT.

This paper identifies reasons for poor student mental health, stemming from psychological vulnerabilities and environmental factors, and explores its impact on academic success in the digital age. Building on this, the study aims to determine how technology-supported equity pedagogy and our proposed framework can best serve students' learning, mental health, and overall well-being. While technology has revolutionized learning, it has also induced stress and exacerbated existing divides in access and experience among students. Effective implementation of these strategies requires a thoughtful approach, integrating technology that enhances engagement, is informed by individual students' challenges, and promotes mental wellness. Furthermore, we analyze preliminary empirical survey data from a course over a semester, examining how students' regularly self-reported well-being feedback correlate with learning outcomes and pedagogy.

By reviewing 46 peer-reviewed sources, this study addresses the following research questions:

- How do mental health challenges impact academic outcomes such as GPA, retention, and classroom participation?
- What structural and social factors contribute to poor mental health among college students?
- How can equity-based teaching strategies and technology-enhanced interventions improve both academic and emotional outcomes?

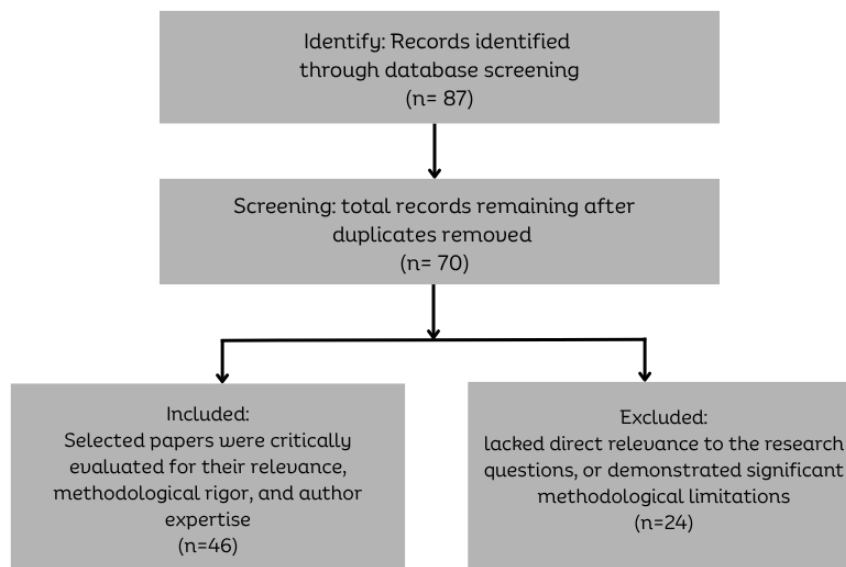
To address these interdependencies and propose solutions, this paper introduces a multi-dimensional framework with three key pillars: pedagogical reform, mental health infrastructure, and technological innovation. We argue that supporting student mental health and academic outcomes requires systemic changes that consider the interactions between these three pillars, not just isolated interventions. Using this approach, we aim to provide a

practical roadmap for educational institutions to respond to the mental health crisis on campus through systemic changes to teaching, resource allocation, and campus culture.

2. Research Methodology

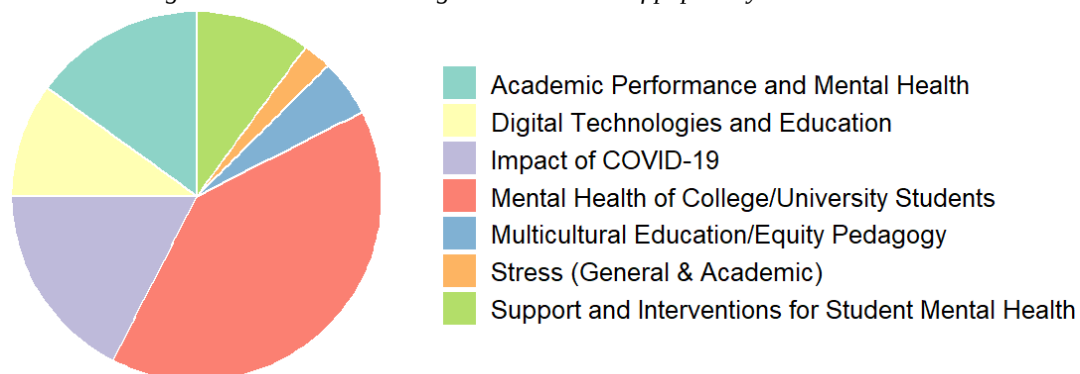
This study employs a mixed-methods approach, combining a comprehensive scoping literature review with quantitative primary data collection. The initial phase involved a systematic literature review on equity pedagogy, student well-being, mental health, and the intersection of race and socioeconomic status with educational outcomes. We specifically focused on studies linking these topics with technology and those published during or after the COVID-19 pandemic. This secondary research provides a broad understanding of the current landscape, identifying key themes and gaps. While it synthesizes existing knowledge effectively, it is limited by the scope of previously published works.

Figure 1: PRISMA flowchart showing the selection of papers



Our research systematically surveyed literature to understand the intersection of technology, equity, and mental health in education. The methodology for selecting relevant studies is depicted in Figure 1, illustrating the identification, screening, and selection phases. This process resulted in a final selection of 44 academic papers. Figure 2 further illustrates the distribution of these papers by common themes.

Figure 2: Pie Chart showing the distribution of papers by common themes



2.2 Primary Data Collection and Analysis

To complement these findings and gain deeper insights into student experiences and perceptions, primary survey data were collected from students enrolled in a Data Structures course at a liberal arts college during the Spring 2025 semester. This largely 'flipped' Java-based Data Structures course is typically taken after a Python-based CS1 course.

Students completed an anonymous pre-class check-in survey at the beginning of each class, responding to questions Q1-3 below using a 0-5 Likert scale, with an optional open-ended question (Q4). Though encouraged by the instructor at the start of each class, completing any or all survey questions remained voluntary and did not count towards grades. The collected data was only accessed after the semester concluded and final grades were submitted. This approach—using anonymous and voluntary participation—minimized potential discomfort, especially regarding questions about emotional states and challenges.

Q1. Content-wise, how prepared are you feeling for today's class? (To gauge students' mental and curricular preparedness before each class).

Q2. Emotionally, how are you feeling today? (To gauge students' emotional well-being for the day).

Q3. Considering this course as a whole, how comfortable and supported are you feeling towards succeeding in the course? (To gauge students' comfort/satisfaction with the course as a whole—curriculum, pedagogy, instructor, and teaching assistants).

Q4. Anything that I should know about or do to make you more comfortable and able to succeed in this course? (Text-based open-ended questions to gauge challenges, ideas for improvement, issues outside of class, etc.)

Responses were collected from 20 students over 20 classes, yielding an initial dataset of 944 responses. After data cleaning (removing missing and outlier values), a final dataset of 776 responses was used for analysis. Students' final course grades were also incorporated. K-Means clustering ($k=3$) was subsequently applied to identify natural groupings of student responses based on their final course grades and average self-reported scores for Q1, Q2, and Q3 across the semester. This provided empirical insights into the interrelationship between academic success and various aspects of self-reported student well-being. For Q4, open-ended responses were cleaned by removing irrelevant and blank entries, then categorized by common themes for consistency. Sentiment analysis was performed using Hugging Face classification models (Jain, 2022) to extract emotions (joy, surprise, neutral, sadness, fear, and anger) from each response. The dominant emotion (highest score) was also identified for each.

3. Problems Leading to Mental Health Issues for Students

Mental health challenges are increasingly recognized as a central obstacle to student success in higher education. The college years coincide with major developmental transitions, and students face academic, financial, and social demands that can exacerbate psychological vulnerabilities. Depression, anxiety, burnout, substance use, and emotional dysregulation are prevalent concerns, each significantly impairing cognitive function, motivation, and learning outcomes (Eisenberg et al., 2009; Vanderlind, 2017).

3.1 Depression, Anxiety, and Burnout

Depression and anxiety are the most commonly reported mental health disorders among college students, significantly affecting academic performance and daily functioning (Ebert et al., 2019). Given that most mental health disorders manifest before age 25 (Auerbach et al., 2016), college students face a high risk. The COVID-19 pandemic further exacerbated these vulnerabilities; a Norwegian study revealed a temporary decrease in mental health consultations during initial strict social distancing in March 2020, followed by significant increases of 73% by April 2021 and another 42% by November 2021 (Grøslund et al., 2022). These increases, primarily driven by anxiety and depression, were more pronounced among female students. Students with depression are twice as likely to drop out compared to peers without mental health conditions (Hunt & Eisenberg, 2010). Similarly, anxiety disorders, often exacerbated by academic pressure, correlate strongly with poor exam performance, reduced class participation, and lower GPA (Iqra, 2024; Cao et al., 2020). Burnout, characterized by emotional exhaustion, cynicism, and reduced academic efficacy, is particularly prevalent among students in rigorous programs or those balancing multiple responsibilities.

3.2 Substance Abuse and Maladaptive Coping Mechanisms

For some students, mental health struggles manifest as maladaptive coping strategies, notably substance use. The college environment often normalizes alcohol and drug use, stemming from attempts to manage stress, depression, and social pressure (Park et al., 2020; Johnston et al., 2020). Wasil et al. (2022) found 11% of students attribute compromised well-being to campus partying and substance use culture. Alcohol and cannabis, widely used to alleviate anxiety or enhance social belonging, can intensify the very problems they are intended to mask, contributing to absenteeism, memory loss, and academic underperformance (Iqra, 2024). Moreover, substance abuse is often comorbid with other psychological disorders like generalized anxiety disorder and major depressive disorder, complicating diagnosis and treatment (Evans, 2021).

3.3 Sleep, Isolation, and Emotional Regulation

Sleep deprivation is another critical, under-addressed factor in student mental health. Poor sleep habits (e.g., irregular schedules, all-nighters, screen-induced insomnia) are prevalent among college students and closely linked with increased anxiety and depressive symptoms (Vanderlind, 2017; Harris et al., 2022). Sleep difficulties impair memory consolidation and emotional regulation, vital for learning and resilience. Social isolation, particularly during the COVID-19 pandemic, further intensified mental health concerns. A study of U.S. and international students during lockdown found loneliness and emotional withdrawal strongly predicted deteriorating mental health and academic disengagement (Hendrick et al., 2023). The cumulative effect of these challenges often leads to emotional dysregulation, especially under stress. Students experiencing emotional dysregulation are more likely to exhibit avoidance behaviors (e.g., skipping class, procrastination), negatively affecting academic persistence and achievement (Hepworth et al., 2018). Effective support strategies must therefore not only address clinical symptoms but also teach coping skills for emotional regulation and resilience (Korinek, 2020).

4. Environmental and Structural Stressors

Individual psychological vulnerabilities alone don't fully explain the mental health crisis on college campuses. Environmental and structural stressors—including financial insecurity, academic demands, family and cultural pressures, and campus social dynamics—create

persistent conditions that erode student well-being. These stressors aren't evenly distributed; students from marginalized or under-resourced backgrounds face compounded challenges that threaten both mental health and academic persistence (Evans, 2021; Gee, Ford, & Iguchi, 2019).

4.1 Financial Hardship and Socioeconomic Disparities

Financial insecurity is a pervasive stressor impacting student mental health and academic performance. Rising tuition, living expenses, and student loan debt place enormous burdens on students and their families. A survey of over 30,000 community college students by Goldrick-Rab et al. (2018) found that over half experienced food or housing insecurity, often choosing between tuition and basic needs. Andrews and Wilding (2004) observed that mid-semester financial hardship led to a marked decline in exam performance. Similarly, Cao et al. (2020) reported that students with fewer economic resources exhibit higher stress, depression, and anxiety, frequently due to long work hours or skipping health services. These disparities not only impact mental health but also limit access to crucial resources like tutoring, counseling, and wellness programs, compounding inequality in academic outcomes.

4.2 Academic Pressure and Institutional Demands

Modern higher education places tremendous performance expectations on students. The pressure to earn high grades, excel on standardized tests, secure internships, and prepare for a competitive job market can be overwhelming. Academic pressure is a significant source of university stress, particularly during midterms and final examinations (Carlotto & Câmara, 2015; Iqra, 2024).

This stress is compounded by institutional cultures that reward overwork and undervalue rest. Hepworth et al. (2018) noted that while academic preparedness (e.g., high SAT scores, GPAs) predicts initial success, it offers little protection against mental exhaustion from heavy course loads and unclear expectations. This often leads to burnout, especially among students in STEM fields, pre-professional tracks, or elite institutions with intense achievement cultures.

Moreover, as higher education becomes increasingly commodified, students are often viewed as consumers, judged on metrics like graduation rates and job placement. This can lead institutions to overlook or minimize mental health struggles in favor of academic performance, perpetuating a harmful cycle of stress and neglect (Kitzrow, 2003).

4.3 Cultural Stigma and Peer Dynamics

Campus culture and peer environments significantly shape mental health. Social comparison, identity performance, and feelings of inadequacy are amplified by peer dynamics and social media, where curated lives and academic accomplishments are constantly on display (Schwartz et al., 2010; Nazari et al. 2023). These dynamics can exacerbate anxiety, impostor syndrome, and loneliness, especially among underrepresented or marginalized students.

Stigma surrounding mental health, particularly in certain cultural or religious communities, further discourages help-seeking. Hunt and Eisenberg (2010) found fear of judgment from peers or family to be a leading reason students avoid counseling, even during severe psychological distress. This silence often leads to delayed intervention and more entrenched challenges.

In the classroom, disclosing mental health challenges presents its own set of stigmas and difficulties for students. This area requires further research and interventions as it directly interacts with pedagogy and the specific members of the classroom community. Students often struggle to disclose their challenges to peers, teaching assistants, and especially course

instructors. Solorio and Barideaux (2024) studied several factors that could influence students, such as instructor characteristics, student demographics, field of study, and mode of communication (e.g., office hours or email).

In a large study of Indian college students, Wasil et al. (2022) found over 40% reported regular burnout symptoms, with academic expectations and social isolation as primary triggers. Eisenberg et al. (2009) reported nearly 60% of distressed students never pursue counseling, reinforcing a cycle of worsening symptoms and declining academic outcomes.

5. Impact on Academic Performance

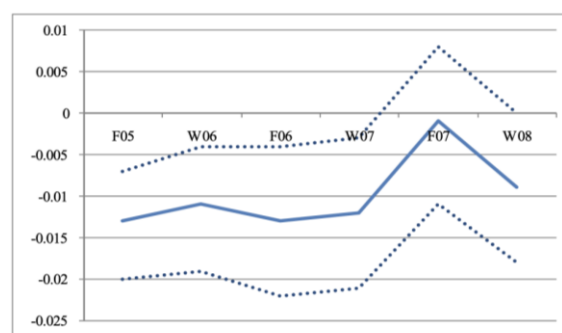
The link between mental health and academic performance is profound and multifaceted. Students grappling with depression, anxiety, or other psychological challenges often struggle to meet academic expectations, while academic failure can, in turn, worsen mental health symptoms. This bidirectional relationship creates reinforcing cycles of stress and underperformance that are difficult to break without targeted intervention and institutional support (Eisenberg, Golberstein, & Hunt, 2009; Kitzrow, 2003).

5.1 GPA, Retention, and Dropout Risk

Mental health challenges strongly predict reduced academic performance (Chu et al., 2022). Depression, in particular, significantly correlates with lower GPAs and higher dropout rates (Antaramian, 2014). Eisenberg et al. (2009) found that students with clinically significant depressive symptoms are twice as likely to leave college without completing their degrees. Similarly, Kitzrow (2003) reported anxiety disorders linked to lower academic persistence and longer time-to-degree completion.

Retention is especially problematic for marginalized students (e.g., first-generation, low-income) who may lack the necessary social and institutional support to cope with psychological distress (Gee, Ford, & Iguchi, 2019). Financial strain, compounded by academic pressure, often pushes these students from higher education before graduation, even those with strong academic credentials (Goldrick-Rab et al., 2018).

Figure 3: Association between GPA and baseline depression



Notes: "F05" refers to the Fall 2005 semester, "W06" the Winter 2006 semester, etc. Each point in the solid line refers to the estimated coefficient for PHQ depression score (0-27), controlling for anxiety, ED symptoms, and all covariates noted below Table 3, in a regression with the GPA in that semester as the dependent variable. The dotted lines refer to the upper and lower bounds of the 95% confidence intervals.

Source: Eisenberg, et al., 2009

5.2 Absenteeism and Class Participation

Mental health issues, like generalized anxiety disorder and social anxiety, often lead to avoidance behaviors such as absenteeism and withdrawal from classroom participation. Iqra (2024) found that students with moderate to severe anxiety were significantly more likely to skip class or delay assignments, resulting in cascading academic consequences.

Students feeling unsupported or stigmatized by instructors are less likely to attend class regularly, turning the academic environment into a source of distress rather than support. Evans (2021) emphasizes that repeated absences often signal deeper psychological issues that, if unaddressed, can evolve into long-term academic disengagement or institutional withdrawal.

5.3 Motivation, Concentration, and Engagement

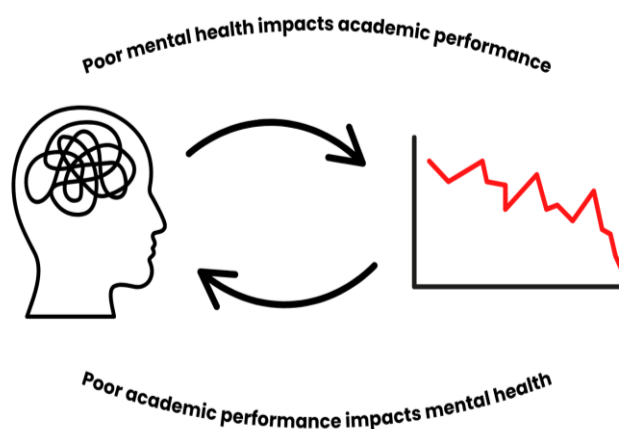
Cognitive symptoms of mental health disorders—such as trouble concentrating, lack of motivation, and difficulty organizing tasks—are critical barriers to effective learning (Rüppel et al., 2015). Depression often leads to cognitive fog, low energy, and helplessness, diminishing students' ability to focus on coursework or meet deadlines (Hunt & Eisenberg, 2010). Burnout, particularly prevalent in overcommitted students, results in emotional exhaustion and declining academic self-efficacy (Wasil et al., 2022).

Additionally, students experiencing chronic stress are more susceptible to disengagement from collaborative learning, group projects, and discussions, which can further isolate them and reduce academic satisfaction. Vanderlind (2017) notes this disengagement can spiral: poor academic performance leads to lowered self-esteem, which fuels worsening mental health.

5.4 The Bidirectional Relationship and Institutional Response

The relationship between mental health and academic success is bidirectional. While poor mental health negatively affects performance, academic challenges can also act as stressors that worsen mental health conditions. For instance, students receiving poor grades or negative feedback often internalize these outcomes as personal failures, contributing to anxiety, depression, or impostor syndrome (Arnett, 2000; Hepworth et al., 2018).

Figure 4: Bidirectional relationship between students' academic performance and mental health



This bidirectionality underscores the need for preventive mental health services embedded within academic life, not just as add-ons. Universities proactively providing peer mentoring, wellness programming, academic counseling, and faculty training tend to report higher

retention, improved GPA averages, and greater student satisfaction (Schwartz et al., 2010; Banks, 1995).

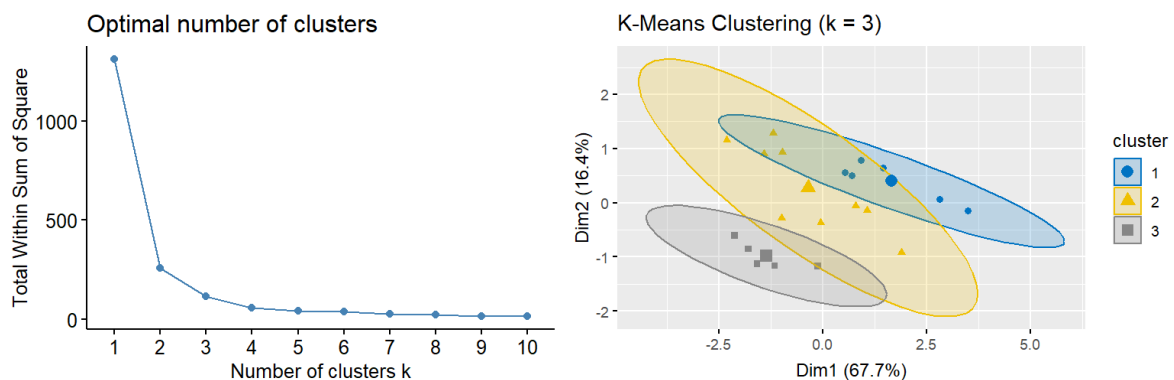
Institutions failing to address this intersection risk normalizing underperformance as student inadequacy, rather than recognizing it as a symptom of systemic support gaps. Acknowledging this feedback loop is essential for creating environments where students can succeed emotionally and intellectually.

Recognizing this complex, bidirectional relationship, this review proposes a multidimensional framework for addressing student well-being and academic success. This framework builds upon three interconnected pillars: pedagogical reform, mental health infrastructure, and technological innovation. Each pillar, while distinct, influences the others, and their integration is essential for creating supportive and effective educational environments.

5.5 Empirical Insights: The Interplay of Well-being and Academic Success

To further explore the relationship between student well-being and academic achievement, this study analyzed primary survey data from a Data Structures course. K-means clustering (k=3) was applied to anonymized student records, grouping individuals based on their final course grades and average self-reported scores for preparedness for class (Q1), emotional well-being (Q2), and their sense of comfort/support for the course (Q3).

Figure 5: K-Means Clustering Results of Student Grades and Well-being Factors



The clustering results, presented in Figure 5 and Table 1 below, reveal distinct patterns:

- Cluster 1 represents students with the highest average course grade (96.36) and consistently reported the highest average scores across all well-being dimensions: preparedness (4.19), emotional well-being (3.92), and course comfort/support (4.22).
- In contrast, Cluster 3, with the lowest average course grade (75.77), showed the lowest scores for preparedness (3.09) and emotional well-being (3.08).
- Cluster 2 falls between these two groupings, with moderate grades and intermediate well-being scores.

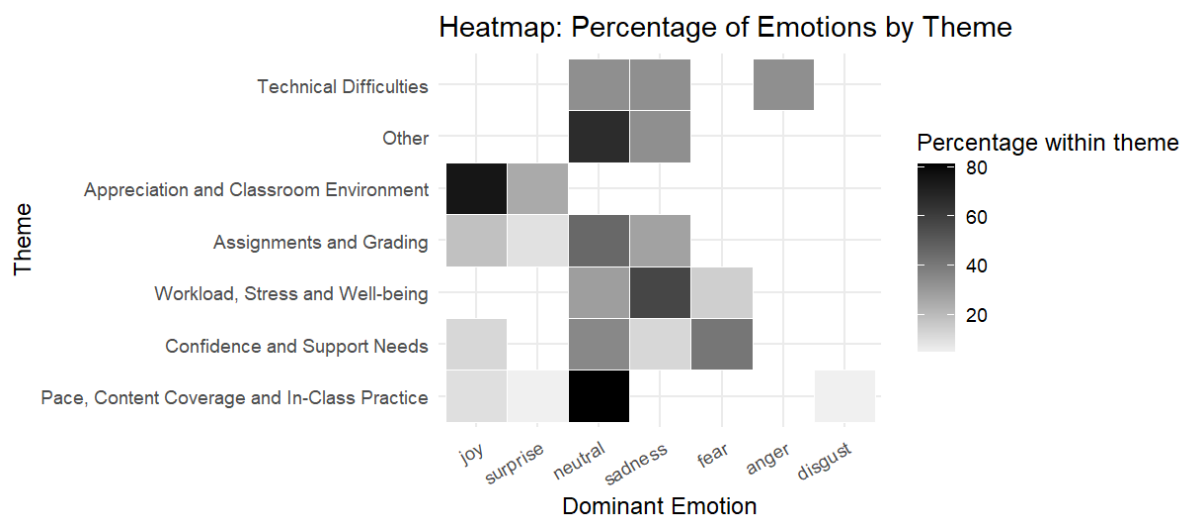
Table 1: Cluster Averages for Course Grade and Well-being Factors.

Cluster	Avg Course Grade	Avg preparedness for class	Avg emotional well-being	Avg sense of comfort/support in the course
1	96.36167	4.199409	3.923487	4.223217
2	89.52889	3.277013	3.48567	3.204468
3	75.774	3.088635	3.08127	3.332559

Moreover, Figure 6 shows a variety of interesting interpretations. The neutral column shows a large chunk of the responses under Other, assignments, grading, and aspects of the pedagogy; these are all the typical feedback responses from students, whether polled or from regular communications to the teaching staff. On the other hand, looking at columns for joy, sadness, and fear, we see emotional feedback that typically is not shared or polled in the classroom - expressions of confidence, appreciation for the course and classroom environment, and especially personal challenges and emotions around workload, burnout, stress, and personal issues outside of class. Demonstrating the need for seeking such feedback from students as part of the pedagogy.

This empirical evidence demonstrates a positive correlation between higher self-reported preparedness, better emotional well-being, and increased comfort/perceived support within the course, and ultimately, higher academic achievement. This finding reinforces the need for holistic interventions that address not only cognitive learning and understanding but also students' mental and emotional states to foster academic success.

Figure 6: Distribution of emotions across the different categories of Q4 responses.



6. The Role of Equity Pedagogy

As higher education student populations grow increasingly diverse in terms of race, class, gender, ability, and mental health status, so too has the demand for more inclusive and adaptive teaching (Pant and Rastogi, 2024). Equity pedagogy responds by centering students' diverse experiences, needs, and cultural identities in the learning process. It recognizes that traditional, one-size-fits-all instruction models fail to support all learners, particularly those who are structurally disadvantaged (Banks, 1995).

Equity pedagogy reimagines curriculum, teaching strategies, and assessment methods to provide equal access to academic success and psychological well-being for all students, especially marginalized ones. Fostering collaborative learning, peer mentoring, and group projects promotes a sense of belonging and alleviates isolation (Wasil et al., 2022; Conradson, 2016). Integrating a culturally responsive curriculum—featuring diverse authors and case studies—enhances student engagement and validation. Moreover, implementing discussion-based formats creates vital spaces for emotional expression, reflection, and dialogue, particularly concerning identity, inequality, and lived experiences. These steps boost participation, improve conceptual understanding, and diminish students' feelings of alienation or invisibility within academic institutions (Banks, 1995; Weisberg & Dawson, 2023).

Flexibility is another key pillar of equity pedagogy, adapting content delivery and student evaluation to meet diverse needs. This involves teaching in multiple ways (e.g., live sessions, pre-recorded materials, visual/auditory formats) to support neurodiverse learners or students with disabilities. It also entails providing access to recorded lectures or transcripts for students who miss class due to mental health appointments or fatigue. Additionally, anonymous check-ins or surveys allow students to share mental health struggles without fear of stigma or academic repercussions. This concept is strengthened by utilizing Universal Design for Learning (UDL) frameworks, which build in accessibility and flexibility from the outset (Garcia Ramos & Wilson-Kennedy, 2024). These flexible methods do not lessen academic rigor; instead, they ensure deeper learning by giving students the psychological safety and autonomy needed to truly succeed (Arnett, 2000; Kitzrow, 2003).

Equity pedagogy is foundational, not supplemental, to quality education. When thoughtfully designed and implemented, it offers a sustainable framework for addressing the twin crises of academic underperformance and student mental distress. The following sections will explore how technology can further enhance these inclusive pedagogical efforts.

7. The Impact of Technology Integration

Technology in higher education is now central to student well-being discussions, beyond just efficiency and access (Ma et al., 2021). The COVID-19 pandemic accelerated digital platform adoption, forcing a rethink of learning environments and mental health services. While creating new possibilities, technology has also introduced stressors and inequalities. This section explores its dual role as both support and stressor.

7.1 Post-COVID Hybrid Learning: Risks and Opportunities

The pandemic forced a shift to remote/hybrid learning, ensuring continuity but exposing fragile support structures. Students faced new stresses: isolation, Zoom fatigue, and lack of structure (Cao et al., 2020; Neamhom, 2024). A Norwegian study showed mental health consultations, especially for anxiety and depression, surged by 73% by April 2021 and another 42% by November 2021 (Grøslund et al., 2022).

However, hybrid learning offered opportunities. Flexible course access benefited students with chronic illnesses, mental health conditions, or caregiving roles (Drushlyak et al., 2023). Some studies found online learning during COVID-19 yielded equivalent or better performance than pre-pandemic face-to-face instruction (Zheng et al., 2022). Students with social anxiety or ADHD reported greater comfort in virtual classes (Wasil et al., 2022). Hybrid models also allowed instructors to integrate multimedia, real-time feedback, and

personalized pacing, aligning with equity pedagogy and UDL (Garcia Ramos & Wilson-Kennedy, 2024).

Still, hybrid effectiveness relies on thoughtful implementation. Without adequate support, digital platforms can alienate students and deepen inequalities (Weisberg & Dawson, 2023). Conversely, the 'blended teaching mode', combining traditional and virtual methods, is emerging as the most effective post-COVID approach, offering flexibility, personalized learning, and increased engagement for high-quality outcomes.

7.2 Digital Divide and Tech-Induced Stress

Despite EdTech's promise, not all students benefit equally. The digital divide—disparities in internet, devices, or digital literacy—remains a major barrier. Many lack reliable service or adequate home devices (Hong, 2024), disproportionately disadvantaging students from rural, low-income, or noisy home environments (Cao et al., 2020; Goldrick-Rab et al., 2018).

Additionally, tech-induced stress and low attention spans are new forms of digital fatigue (Saha et al., 2021). Constant screens, "always-on" pressure, and rapid notifications lead to cognitive overload, anxiety, and reduced sleep (Evans, 2021). Hybrid platforms can erode the boundary between academic and personal recovery time, vital for mental health.

Institutions must balance tech adoption with mindfulness: offering healthy tech use guidelines, integrating offline assignments, and designing user-friendly digital ecosystems that promote well-being. When integrated with equity-focused pedagogy and institutional investment, digital tools offer personalized learning and expanded care. Without attention to access, design, and student feedback, these tools risk intensifying the very challenges they aim to solve.

8. Conclusion

Student mental health in higher education is at a critical juncture. Academic success is inseparable from emotional well-being, and the reviewed body of literature highlights the urgent need for institutional, pedagogical, and technological reform.

This review shows widespread mental health disorders like depression, anxiety, and burnout, particularly among students facing financial hardship, marginalized identities, or intense academic demands (Eisenberg et al., 2009; Hunt & Eisenberg, 2010; Iqra, 2024). The academic fallout—reduced GPA, absenteeism, and increased dropout risk—is well-documented, reflecting systemic flaws in how institutions define success.

8.1 Ongoing Failures and Blind Spots

Despite progress, key structural and philosophical issues persist. The gap remains between institutional metrics (GPA, retention) and students' lived mental health struggles (DiPlacito-DeRango, 2016). Standardized testing and rigid assessments penalize students with anxiety, ADHD, or learning differences, perpetuating a narrow definition of academic excellence (Iqra, 2024; Hepworth et al., 2018). Likewise, this also applies to students struggling with personal challenges outside of class.

Furthermore, much literature lacks an intersectional lens. First-generation, neurodivergent, Indigenous, and low-income students are often underrepresented in studies, their unique challenges generalized or ignored. Popular interventions, like peer counseling and teletherapy, are often lauded without rigorous examination of their limitations and inequities,

such as student counselor burnout or reduced virtual therapeutic impact for high-needs cases (Wasil et al., 2022; Hunt & Eisenberg, 2010).

Rapid digitization has also introduced new stressors: screen fatigue, techno-anxiety, and digital infrastructure inequity. While educational technology can remove barriers, it can also deepen them without deliberate design and adequate training (Evans, 2021; Cao et al., 2020).

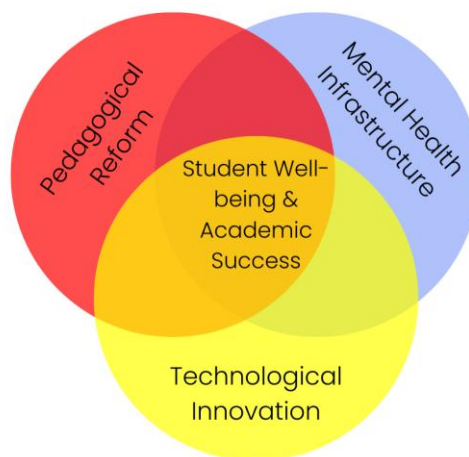
8.2 A 21st-Century Mandate: Where We Must Go

The 21st-century classroom must prioritize adaptability, inclusion, and holistic human development, guided by a multidimensional framework integrating support. The future of mental health in higher education depends on reconceptualizing success to include emotional resilience, engagement, and self-regulation alongside academic achievement. Investing in inclusive pedagogy that adapts to students' observed challenges, diverse identities, and learning preferences is fundamental, not merely an accommodation. Educational technology should foster human connection, with blended teaching models showing particular promise. Crucially, centering underrepresented voices in research and practice is vital, especially those whose mental health is shaped by systemic inequality.

Future research must be more participatory, intersectional, and integrative, bridging silos between mental health, pedagogy, technology, and institutional policy. Scholars, educators, and administrators must collaborate to cultivate learning environments where mental wellness is the norm.

The multidimensional framework proposed—pedagogical reform, mental health infrastructure, and technological innovation—provides a roadmap for institutions to holistically address student well-being and academic success. Implementing it requires the following concrete strategies:

Figure 7: The Multidimensional framework for student well-being & academic success based on the literature



8.2.1 Pedagogical Reform: Inclusive & Flexible Learning

Adapt teaching methods and curriculum to involve more of the individual student's holistic experiences impacting their learning, reduce academic stresses, and promote healthy engagement. Train faculty to integrate culturally responsive content and experiences (e.g., diverse authors, case studies) and encourage narrative assignments that connect content to personal experiences. Establish flexible deadlines and diverse assessment methods (e.g., portfolios, creative projects) to support anxious students and varied learning styles. Utilize

Universal Design for Learning (UDL) from the outset for accessibility (e.g., live/recorded sessions, visual/auditory formats, lecture transcripts). Use discussion-based forums for emotional expression and dialogue on identity and inequality. Implement regular anonymous check-ins or surveys for students to share struggles without stigma.

8.2.2 Mental Health Infrastructure: Accessible & Integrated Support

Significantly invest in normalizing and expanding campus mental health services: counseling, psychiatric support, and crisis intervention. Embed peer mentoring and wellness programming within academic life. Establish clear protocols for faculty referrals, ensuring the academic environment becomes a source of support, not stigma.

8.2.3 Technological Innovation: Supportive & Equitable Digital Ecosystems

Address disparities in internet access, devices, and digital literacy via loaner programs or subsidized internet. Offer recorded lectures and transcripts for students who miss class. Develop online modules for stress/time management. Prioritize blended teaching modes for flexibility, personalized learning, and increased engagement, leading to high-quality outcomes. Regularly assess the effectiveness and benefits of the technology used. These recommendations will foster both academic excellence and student well-being.

8.3 Future Work

Drawing from this analysis, particularly concerning the crucial role of student support for success across diverse learning environments and styles, our future research will primarily focus on investigating and improving student experiences and well-being in the 21st-century classroom, and how instructors can effectively understand and respond to aspects like equity, mental health, and overall well-being. The literature, especially from the COVID-19 pandemic era, highlights student mental health and well-being as essential components of academic success, underscoring the need for more direct attention in these areas. In reality, however, COVID-19 is just one of many academic disruptions that impact students globally every day; it only served as a wake-up call.

While our previous studies within the Computer-Supported Agile Teaching (CSAT) framework have indirectly addressed aspects of equity and well-being, our current and future research will more explicitly target these topics. As demonstrated in our survey results reported and discussed in Section 5.5, we further validate the various points discussed in this literature summarization. Specifically, there is a positive correlation between higher self-reported preparedness, better emotional well-being, and increased comfort/perceived support within a course, and ultimately, higher academic outcomes. This was a limited and preliminary study, but it demonstrates the need for teaching and pedagogy to take into account and address more of individual students' experiences and challenges impacting their learning, such as their mental health and overall well-being. Therefore, in terms of the pedagogy and the classroom, this involves addressing the challenges that students have about mental health stigma, in disclosing their struggles, and in seeking support in a timely manner. Practically speaking, teachers should normalize gathering students' feedback on their well-being and personal challenges and this being a comfortable and welcome experience for students, not just on their learning and curricular goals, and then provide the necessary help, interventions, or referrals to appropriate support resources.

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