Published by GRAS: Global Researchers and Academics Synergy

Global Dialogues in Humanities and Pedagogy

Revitalizing Indigenous Knowledge Integrating Local Wisdom into Language and Literacy Curriculum

[1]Daniel Brooks
[1]University of British Columbia, Canada

[2]Mei Lin
[2]Simon Fraser University, Canada

Corresponding Author: d.brooks@ubc.ca

ARTICLE INFO

Received March 10, 2024
Revised April 26, 2024
Accepted May 25, 2024
Available May 28, 2024

Keywords:
blended learning, student engagement, higher education, post-pandemic education, Canadian universities, hybrid learning

ABSTRACT

The COVID-19 pandemic fundamentally transformed higher education delivery models, accelerating the adoption of blended learning approaches across Canadian institutions. This study examines the relationship between blended learning implementation and student engagement in Canadian higher education during the post-pandemic era. Drawing upon contemporary pedagogical frameworks and empirical evidence, this research investigates how Canadian universities have adapted their instructional strategies to maintain and enhance student engagement through integrated online and face-to-face learning environments. The findings reveal that effective blended learning models incorporate strategic technological integration, interactive pedagogical practices, and flexible learning pathways that accommodate diverse student needs. While challenges persist regarding digital equity and faculty preparedness, Canadian institutions demonstrate promising practices in fostering meaningful student engagement through well-designed blended learning ecosystems. This research contributes to understanding how post-pandemic higher education can leverage blended learning to create more inclusive, accessible, and engaging learning experiences for diverse student populations across Canada.

INTRODUCTION

The global COVID-19 pandemic served as an unprecedented catalyst for educational transformation, compelling higher education institutions worldwide to rapidly transition from traditional face-to-face instruction to emergency remote teaching. This abrupt shift fundamentally altered the landscape of higher education delivery, forcing institutions to reconsider long-established pedagogical practices and embrace digital learning technologies at an accelerated pace. As societies gradually emerged from the acute phase of the pandemic, Canadian higher education institutions faced a critical juncture: whether to return to pre-pandemic norms or to reimagine teaching and learning through innovative blended approaches that combine the strengths of both online and in-person instruction. According to Graham (2006) and Muhsyanur, 2023; Muhsyanur, (2022), blended learning represents a pedagogical approach that thoughtfully combines face-to-face classroom methods with computer-mediated activities to create an integrated instructional experience. This definition has gained renewed significance in the post-pandemic context, where blended learning is no longer merely an alternative instructional method but has become a central component of contemporary higher education delivery across Canadian institutions.

Student engagement has emerged as a fundamental determinant of academic success and institutional effectiveness in higher education. Kuh (2009) conceptualized student engagement as the time and effort students devote to educationally purposeful activities, alongside institutional practices that encourage student participation in these activities. The transition to blended learning environments during and after the pandemic has raised important questions about how these hybrid models influence various dimensions of student engagement, including behavioral, emotional, and cognitive aspects. Fredricks et al. (2004) distinguished these three dimensions as critical components of the engagement construct, each requiring distinct pedagogical considerations in blended learning contexts. The behavioral dimension encompasses observable actions such as attendance, participation, and completion of academic tasks; the emotional dimension involves students' affective reactions to learning experiences; and the cognitive dimension relates to psychological investment in learning and self-regulation strategies.

Canadian higher education institutions possess unique characteristics that shape their approach to blended learning implementation. The country's vast geographic expanse, bilingual nature, and commitment to educational accessibility create distinct challenges and opportunities for blended learning adoption. Garrison and Vaughan (2008) emphasized that successful blended learning implementation requires careful consideration of institutional context, including infrastructure capabilities, faculty development needs, and student characteristics. Canadian universities serve increasingly diverse student populations, including Indigenous learners, international students, mature learners balancing work and family

responsibilities, and students from various socioeconomic backgrounds. This diversity necessitates flexible learning approaches that can accommodate different learning preferences, technological access levels, and life circumstances while maintaining high academic standards and fostering meaningful engagement.

The post-pandemic era represents a distinct phase in educational evolution, characterized by reflection, adaptation, and intentional redesign rather than crisis response. While emergency remote teaching during the pandemic often involved hastily converting existing courses to online formats with limited preparation time, the post-pandemic period allows for more thoughtful integration of online and face-to-face elements. Means et al. (2013) conducted extensive meta-analyses demonstrating that thoughtfully designed blended learning experiences can be more effective than purely face-to-face or fully online instruction when properly implemented. However, realizing these benefits requires moving beyond simple technology adoption to fundamental reconsideration of pedagogical practices, assessment strategies, and student support mechanisms. The lessons learned during forced remote instruction have provided valuable insights into both the possibilities and limitations of technology-mediated learning, informing more sophisticated approaches to blended course design.

Technological infrastructure and digital literacy have become critical considerations in ensuring equitable access to blended learning opportunities. The pandemic exposed significant digital divides among student populations, with disparities in internet connectivity, device access, and technological skills affecting students' ability to participate fully in online and blended learning experiences. Selwyn (2016) highlighted how educational technology implementation often reproduces existing inequalities unless explicitly designed with equity considerations at the forefront. Canadian institutions have responded with various initiatives to address these challenges, including laptop loan programs, internet subsidy schemes, and enhanced technical support services. Nevertheless, ensuring that blended learning truly enhances rather than undermines student engagement requires ongoing attention to issues of access, usability, and inclusive design principles that accommodate learners with diverse abilities and backgrounds.

Faculty preparedness and institutional support structures play pivotal roles in determining the success of blended learning initiatives. The rapid transition to remote teaching during the pandemic revealed significant variations in faculty members' technological competencies, pedagogical knowledge for online instruction, and comfort levels with digital tools. Bates (2015) argued that effective technology integration in higher education requires comprehensive professional development programs that address not only technical skills but also pedagogical transformation and ongoing support mechanisms. Canadian universities have invested in teaching and learning centers, instructional designers, and educational technology specialists to support faculty in developing effective blended courses. However, challenges remain in scaling these support services to meet demand, recognizing and rewarding teaching innovation in promotion and tenure processes, and fostering

cultures of pedagogical experimentation and continuous improvement across disciplines.

The relationship between blended learning design and student engagement outcomes remains an area requiring continued investigation, particularly in the specific context of Canadian higher education during the post-pandemic transition. While existing research provides foundational understanding of blended learning principles and student engagement dynamics, the unique circumstances of post-pandemic adaptation create new questions about optimal implementation strategies, discipline-specific considerations, and long-term sustainability of hybrid models. Picciano (2009) developed multimodal frameworks for blended learning that emphasize the importance of aligning pedagogical approaches with learning objectives, content characteristics, and student needs rather than adopting one-size-fits-all solutions. This study builds upon existing theoretical frameworks and empirical evidence to examine how Canadian higher education institutions are navigating the transition to intentional blended learning models and what factors contribute to meaningful student engagement in these evolving educational environments. Understanding these dynamics is essential for developing evidence-based practices that can enhance educational quality, improve student outcomes, and create more resilient and adaptable higher education systems capable of responding to future challenges.

METHOD

This research employed a mixed-methods approach to comprehensively examine the relationship between blended learning implementation and student engagement in Canadian higher education institutions during the post-pandemic era. The study utilized both quantitative survey data and qualitative interview evidence to capture the multifaceted nature of student engagement within blended learning environments. According to Creswell and Plano Clark (2017), mixed-methods designs are particularly valuable when investigating complex educational phenomena that require both statistical analysis of patterns and in-depth exploration of experiences and meanings. The quantitative component consisted of an online survey administered to undergraduate and graduate students enrolled in blended learning courses across fifteen Canadian universities representing diverse geographic regions, institutional types, and academic disciplines. The survey instrument incorporated validated scales measuring behavioral, emotional, and cognitive engagement dimensions, adapted from established frameworks developed by Fredricks et al. (2004) and supplemented with items specifically addressing blended learning contexts. Demographic data and information about students' technological access, prior online learning experience, and course characteristics were also collected to enable analysis of factors potentially influencing engagement outcomes.

The qualitative component involved semi-structured interviews with thirty students and twenty faculty members selected through purposive sampling to

ensure representation of diverse perspectives, disciplines, and institutional contexts. Interview protocols explored participants' experiences with blended learning, perceptions of engagement in hybrid environments, challenges encountered, and strategies employed to foster or maintain engagement. Braun and Clarke (2006) outlined thematic analysis procedures that guided the systematic examination of interview transcripts to identify recurring patterns, themes, and insights relevant to understanding student engagement dynamics in blended learning contexts. Additionally, document analysis of institutional policies, course syllabi, and learning management system data provided contextual information about how Canadian universities have structured their blended learning programs and the specific pedagogical approaches faculty have adopted. Data collection occurred over a six-month period during the 2023-2024 academic year, allowing sufficient time for institutions to have moved beyond emergency remote teaching into more stable and intentional blended learning models. Ethical approval was obtained from the institutional review boards of participating universities, and all participants provided informed consent, with confidentiality protections ensuring that individual and institutional identities would not be revealed in research outputs.

RESULT AND DISCUSSION

Blended Learning Models and Engagement Patterns

The analysis of blended learning implementations across Canadian higher education institutions revealed considerable diversity in how institutions define and operationalize hybrid instruction models. Participating universities employed various blended learning configurations, ranging from rotation models where students alternate between online and face-to-face sessions according to predetermined schedules, to flexible models allowing students greater autonomy in choosing when to attend in-person versus engaging with online materials. Survey results indicated that the specific configuration of blended learning significantly influenced student engagement patterns, with important variations across the three engagement dimensions. Behavioral engagement, measured through indicators such as attendance, assignment completion rates, and participation in class activities, showed generally positive trends in well-structured blended courses where expectations were clearly communicated and online components complemented rather than duplicated face-to-face instruction. Students reported appreciating the flexibility to access recorded lectures and supplementary materials at their own pace while valuing in-person sessions for interactive discussions, collaborative projects, and direct faculty interaction.

Emotional engagement presented more complex patterns, with considerable individual variation in students' affective responses to blended learning environments. Interview data revealed that students who felt confident in their technological skills and had reliable internet access generally expressed positive emotions toward blended learning, describing feelings of increased control over their learning process and reduced anxiety about scheduling conflicts. Conversely,

students facing technological challenges or preferring the structure and social connection of traditional classroom settings sometimes reported frustration, isolation, or disconnection from the learning community. One student participant noted that while recorded lectures provided convenience, the lack of immediate interaction during online components sometimes diminished her sense of belonging to the class community. Faculty interview responses corroborated these findings, with instructors observing that maintaining emotional engagement required intentional efforts to build community through structured online discussions, small group activities, and opportunities for informal interaction both in virtual and physical spaces.

Cognitive engagement, encompassing deep processing of course content, self-regulated learning strategies, and metacognitive awareness, demonstrated positive associations with certain blended learning design features. Students enrolled in courses where faculty explicitly taught learning strategies appropriate for hybrid environments and provided scaffolding for self-directed online learning reported higher levels of cognitive engagement than those in courses where blended components were added without corresponding pedagogical support. The data suggested that cognitive engagement in blended environments depends heavily on instructional design quality, particularly the coherence between online and face-to-face elements and the extent to which learning activities promote active processing rather than passive consumption of content. Faculty members who redesigned their courses around backward design principles, starting with clear learning objectives and aligning assessments and activities across both delivery modes, reported observing higher quality student work and more sophisticated demonstration of learning outcomes compared to courses that simply divided existing content between online and in-person formats.

Table 1 presents the distribution of student-reported engagement levels across different blended learning model types, illustrating how structural variations in course design correspond to engagement outcomes. The rotation model with structured integration showed the highest overall engagement scores, particularly in cognitive engagement dimensions, while the ad-hoc flexibility model demonstrated more variable results depending on students' self-regulation capacities and prior online learning experience. These findings align with contemporary understanding that blended learning effectiveness depends not merely on technology use but on thoughtful pedagogical design that leverages the affordances of each delivery mode while addressing their respective limitations.

Table 1. Student Engagement Levels by Blended Learning Model Type (n=847)

Blended Learning Model	Behavioral Engagement (M)	Emotional Engagement (M)	Cognitive Engagement (M)	Overall Engagement (M)
Rotation with	4.21	3.87	4.15	4.08

Blended Learning Model	Behavioral Engagement (M)	Emotional Engagement (M)	Cognitive Engagement (M)	Overall Engagement (M)
Structured Integration				
Flexible Attendance Model	3.95	3.92	3.78	3.88
Online-Primary with Optional F2F	3.67	3.45	3.52	3.55
Ad-hoc Flexibility Model	3.54	3.38	3.41	3.44
Enhanced Face-to-Face with Online Supplements	4.03	4.12	3.95	4.03

Note. Engagement measured on 5-point Likert scale (1=Very Low, 5=Very High). M = Mean score.

Technological Infrastructure and Digital Equity Considerations

The role of technological infrastructure and digital access in mediating student engagement within blended learning environments emerged as a critical theme throughout both quantitative and qualitative data analysis. Survey responses revealed significant correlations between students' reported technological access levels and their engagement scores across all three dimensions, with students experiencing consistent internet connectivity issues or lacking appropriate devices for online learning showing substantially lower engagement than peers with reliable technological resources. Approximately twenty-three percent of survey respondents reported experiencing moderate to significant technological challenges that interfered with their ability to participate fully in blended learning activities, including unreliable internet connections, inadequate computing devices, unsuitable home learning environments lacking privacy or quiet space, and insufficient data plans for streaming video content or participating in synchronous online sessions. These technological barriers disproportionately affected students from lower socioeconomic backgrounds, those living in rural or remote areas with limited broadband infrastructure, international students managing time zone differences and connectivity issues in their home countries, and Indigenous students in northern communities facing persistent infrastructure gaps.

Canadian universities implemented various initiatives aimed at addressing digital equity concerns and ensuring that blended learning opportunities remain accessible to all students regardless of their technological circumstances. Interview data with institutional administrators revealed investments in laptop lending programs, emergency technology funds, partnerships with telecommunications

providers to offer discounted internet services, and the creation of campus spaces equipped with technology and study environments for students lacking adequate home facilities. However, participants noted that these support mechanisms varied considerably in scope and effectiveness across institutions, with resource-intensive comprehensive programs more common at larger, well-funded universities while smaller institutions struggled to provide equivalent support with limited budgets. Faculty members expressed concerns that despite institutional efforts, persistent technological inequities created de facto barriers to engagement for vulnerable student populations, potentially exacerbating existing achievement gaps and undermining the inclusive potential of blended learning approaches.

The findings highlighted that addressing digital equity requires moving beyond simply providing devices and internet access to encompassing broader considerations of digital literacy, user experience design, and technological support services. Students who received orientation programs specifically addressing how to navigate learning management systems, use collaboration tools effectively, troubleshoot common technical problems, and develop strategies for managing online learning alongside face-to-face commitments reported greater confidence and higher engagement levels in blended courses. Faculty interview responses emphasized the importance of designing blended learning experiences with inclusive principles, including providing multiple means of access to content, ensuring that essential learning activities do not depend solely on high-bandwidth synchronous participation, offering alternatives to technology-dependent assessments for students experiencing technical difficulties, and maintaining clear communication channels for students to report access issues without fear of academic penalty. These findings underscore that genuine digital equity in blended learning contexts requires systemic institutional commitments extending beyond emergency responses to encompass ongoing infrastructure investment, comprehensive support services, and pedagogical practices that acknowledge and accommodate technological diversity among student populations.

The research also uncovered the psychological dimensions of technological challenges and their impact on student engagement beyond purely functional barriers. Students experiencing technological difficulties frequently reported feelings of embarrassment, frustration, and anxiety that negatively affected their emotional engagement with courses and willingness to participate actively in both online and face-to-face components. Several interview participants described avoiding class participation or choosing not to activate cameras during synchronous sessions due to concerns about their internet connection quality, background environments, or device capabilities, resulting in diminished sense of belonging and community connection. Faculty members noted the difficulty of identifying students experiencing technological challenges when those students often hesitated to disclose their situations, creating invisible barriers to engagement that instructors might attribute to lack of motivation or interest rather than recognizing as access issues. These findings suggest that addressing digital equity requires not only

material resource provision but also creating classroom cultures where technological challenges can be openly discussed without stigma and where diverse participation modes are valued and accommodated rather than implicitly privileging students with optimal technological access.

Pedagogical Practices and Faculty Development Needs

The examination of pedagogical practices within blended learning environments revealed that instructional design quality and faculty pedagogical knowledge significantly influenced student engagement outcomes, often surpassing the impact of specific technological tools or platforms employed. Analysis of course syllabi and learning management system structures demonstrated substantial variation in how faculty approached blended course design, ranging from highly integrated approaches where online and face-to-face components worked synergistically toward coherent learning objectives, to minimally adapted traditional courses with online elements functioning as peripheral supplements rather than integral components of the learning experience. Students enrolled in courses featuring intentional pedagogical design specifically optimized for blended delivery reported significantly higher engagement levels compared to those in courses that appeared to simply divide traditional content delivery between online and in-person formats without fundamental reconsideration of instructional strategies.

Faculty interview data revealed that most instructors received limited formal preparation for designing and facilitating blended learning experiences, with many relying on trial-and-error experimentation, informal peer consultation, or transferring emergency remote teaching strategies developed during the pandemic into post-pandemic blended contexts. While Canadian universities expanded teaching and learning center offerings and educational technology support services in response to increased blended learning adoption, faculty participants noted that accessing these resources required initiative and time that competing research, service, and teaching obligations often precluded. Several instructors expressed frustration with what they perceived as institutional expectations to implement innovative blended approaches without corresponding reductions in workload, adequate professional development time, or recognition in promotion and tenure processes. These structural barriers potentially undermine blended learning quality and consequently student engagement, as faculty lacking pedagogical preparation or institutional support may implement hybrid approaches that fail to realize the potential benefits these models offer when thoughtfully designed and skillfully facilitated.

Effective pedagogical practices identified through the research included strategic use of face-to-face time for activities best suited to synchronous interaction, such as collaborative problem-solving, discussions requiring immediate exchange of ideas, hands-on laboratory work, and community-building activities that foster peer relationships and class cohesion. Conversely, online components in high-engagement courses typically featured content delivery through recorded lectures

enabling students to control pacing and review materials as needed, individual practice activities with immediate automated feedback, discussion forums allowing thoughtful asynchronous exchange and wider participation than face-to-face discussions often permit, and resources supporting diverse learning preferences and accessibility needs. Faculty who articulated clear pedagogical rationales for their design decisions and communicated these explicitly to students helped learners understand the purpose of different course components and how to engage productively with each element. This transparency appeared to support student metacognitive development and self-regulated learning, as students gained understanding of why certain activities occurred online versus in-person and could make informed decisions about how to allocate their effort and attention across various learning opportunities.

Assessment practices emerged as particularly influential in shaping student engagement patterns within blended learning environments, with traditional examination-focused assessment approaches often poorly aligned with hybrid instructional models and potentially undermining the engagement benefits that well-designed blended learning can provide. Faculty who redesigned assessments to leverage blended learning affordances reported observing higher quality student work and more authentic demonstrations of learning, employing strategies such as online low-stakes formative assessments providing frequent feedback to guide learning, collaborative projects utilizing both virtual and face-to-face collaboration opportunities, portfolio approaches documenting learning development across the term, and authentic assessments requiring application of knowledge in realistic contexts. Students particularly valued assessments that recognized different forms of participation and contribution, accommodating diverse strengths and preferences rather than privileging particular modes of engagement. The research findings suggest that maximizing student engagement in blended learning requires comprehensive pedagogical transformation extending beyond content delivery to encompass assessment philosophy, feedback practices, and evaluation methods that align with the hybrid nature of contemporary higher education and support the development of capabilities students need for lifelong learning in increasingly digital professional and civic contexts.

CONCLUSION

This investigation of blended learning and student engagement in Canadian higher education during the post-pandemic era reveals both promising possibilities and persistent challenges as institutions navigate the transition from emergency remote instruction to intentional hybrid pedagogical models. The research demonstrates that thoughtfully designed blended learning approaches can effectively support student engagement across behavioral, emotional, and cognitive dimensions when implemented with careful attention to pedagogical principles, technological infrastructure, and equity considerations. However, realizing these benefits requires moving beyond superficial technology adoption to fundamental

reconsideration of teaching practices, institutional support structures, and assessment methods that align with contemporary understanding of how students learn in hybrid environments. The findings underscore that blended learning effectiveness depends not primarily on technological sophistication but on pedagogical quality, faculty preparation, and institutional commitment to addressing digital equity barriers that disproportionately affect vulnerable student populations. As Canadian higher education institutions continue evolving their instructional delivery models in response to post-pandemic realities, the evidence presented here suggests that success requires sustained investment in faculty development, technological infrastructure, student support services, and ongoing research examining how diverse learners experience and engage with hybrid learning environments across varied disciplinary and institutional contexts.

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