Conceptual Article

e-ISSN: 2710-2122, p-ISSN: 2710-2114
2025: Vol 7(2), pp 1-18. https://doi.org/10.38140/ijer-2025.vol7.2.03
Interdisciplinary Journal of Education Research

Reconceptualising Blended Learning and Pedagogies for Innovative Classroom Practices

Billey Addam[1]*

AFFILIATIONS

[1]Faculty of Education, Walter Sisulu University, Komani, South Africa.

CORRESPONDENCE

Email: baddam@wsu.ac.za*

EDITORIAL DATES
Received: 28 February 2025
Revised: 03 June 2025
Accepted: 04 July 2025
Published: 05 August 2025

DOI: 10.38140/ijer-2025.vol7.2.03

Abstract: Contemporary education has undergone tremendous pedagogical shifts, culminating in an altered higher education landscape. The transition from the dominant traditional in-person mode to emergency remote online facilitation, and subsequently to adopted blended learning environments, necessitates a reconceptualisation of pedagogy for strategic and process realignment. Furthermore, the rapid transformation in education, accompanied by reforms, has raised expectations for lecturers and graduates to possess abilities that combine subject understanding with suitable instructional practices to meet the demands of the digital workforce. This study employs a conceptual analysis methodology to understand and reconceptualise blended learning and its pedagogies. By navigating the literature through the lenses of the Community of Inquiry, the study highlights the relevance of university teachers and students comprehending the concept and pedagogies in order to implement blended learning effectively. Additionally, a supportive environment must be established with frameworks that promote innovative classroom practices and inclusive learning. The study indicates that inadequate comprehension of blended learning concepts, modes, models, and pedagogies hinders the promotion of optimal learning and teaching practices in modern educational settings. It suggests that providing contemporary technological tools and resources is crucial for fostering innovative classrooms. Moreover, continual professional development is essential to respond to the rapidly emerging digital technologies for effective blended learning implementation. The study underscores the importance of understanding both the concept and pedagogies, and it provides insights into the implications for higher education institutions' rapid adoption of blended learning.

Keywords: Blended learning, digital technology, innovative classroom practices, blended pedagogy, traditional pedagogy.

1. Introduction

The emergence of the coronavirus pandemic pushed many global academic institutions, including South African universities, to implement courses online, accompanied by appropriate teaching methods. With the slow de-escalation of the pandemic wave, several educational institutions shifted their academic practices to blended learning (BL) engagements. Researchers such as Lederman (2020) observe that the coronavirus epidemic prompted university lecturers and students to accept digital technology education experiences as the pinnacle of interactive learning processes. Additionally, Hill and Smith (2023) and Baykal et al. (2021) concur with Jewitt (2014), highlighting the complexities of integrating students' digital knowledge and proficiency—such as information literacy, digital communication, and critical thinking—into today's multimodal, technology-rich education. They advocate for new pedagogical frameworks and implementation strategies for this transformative multimodal learning environment.

The changing landscape of learning and teaching, from conventional in-person instruction to remote online facilitation, demonstrates the educational system's versatility and requires commitment and dedication. University lecturers and students have shown resilience and an ability to achieve appropriate technological competencies through self-directed learning, despite the challenges (Antwi-Boampong et al., 2022). Admittedly, operationalising online experiences has been difficult,

as factors such as the quality of the learning experience, technological infrastructure and resources, learning instructional materials, and the application of appropriate pedagogies may not adequately support students and lecturers (Addam, 2025), echoing the principle that no student should be left behind in the academic trajectory as a driving focus.

A paradigm shift (epistemological and ontological) underpinning the vast blended learning-teaching rollout and a realignment of pedagogical orientations regarding technology integration (Ashraf et al., 2021; Baykal et al., 2021) should consider BL an educational strategy that combines online and traditional venue-based mechanisms and systems. Recent scholarship (Jayanthi, 2019; Antwi-Boampong et al., 2022) extends the understanding of BL beyond the concept of in-person and online pedagogies. They suggest a hybrid of the two modes, facilitated through computer-mediated applications of online activities within content and facilitation, along with the application of innovative pedagogies.

According to Dyer et al. (2018), using the blended learning (BL) environment to foster connections between students, academics, and learning communities is critical. This focus on connections in the digital age serves as a potent reminder of the importance of human interaction in education. Archambault et al. (2022) demonstrated the value of blended learning by incorporating curriculum creation, instructional design, implementation, and, ultimately, student learning evaluation.

Various blended learning approaches have different philosophical foundations, depending on the model used. The most popular educational models include A La Carte, Flipped Classroom, Flex, Rotational (Station, Lab, and Individual Rotations), and Enriched Virtual (Borup et al., 2020; Smith & Hill, 2018). Contextualised philosophy and theories that align with the pedagogical application in the classroom are necessary for each model. One of the challenges is the paucity of research on the fundamental understanding of blended learning and the theories that support pedagogies, emphasising multimodal approaches and associated pedagogies for curriculum facilitation. This study aims to explore the understanding of the concept of blended learning. It also examines how comprehension of the concept and pedagogies advances the effective implementation of blended learning in the university environment. Furthermore, it analyses how reconceptualising and rethinking blended learning and pedagogies influence innovative classroom facilitation.

2. Literature Review

A substantial body of studies by classic and contemporary researchers, professionals, and scholars presents multiple perspectives on blended learning (BL), resulting in a significant volume of literature. Many of these works discuss the definitions, explanations, fundamental conceptualisations, operations, and the benefits, problems, strengths, and limitations of multimodal deployment of BL. However, research that clarifies BL as a hybrid of in-person integrated online education with pedagogical frameworks is scarce. As a result, in this work, I propose a reconceptualisation and a conceptual understanding of BL and its associated pedagogies, based on theoretical engagement and practical implementation. I also illuminate the authenticity of the combined face-to-face and online interactive modes in education. In the subsequent paragraphs, I present the perspectives of various authors, scaffolding their positions on BL concepts alongside the associated pedagogies.

2.1 Perspectives on the concept of blended learning

Scholars, including Smith & Hill (2018), Saliba (2013), and Bliuc et al. (2007), provide insights that locate blended learning (BL) within activity frameworks. Bliuc et al. (2007) suggest that BL, as a thoughtful co-system (face-to-face - online), is systematically structured to maximise learning experiences in digital technology-integrated interactions with appropriate resources between learning partners. Emphasising the terms "thoughtful and systematic" underscores the need for critical forethought, planning, and implementation, with comprehension guiding the principle.

However, Saliba et al. (2013)add that blended learning includes instructional facilitation tactics or approaches that combine traditional educational culture with electronic-based instructions and activities. Hill and Smith (2023) further suggest that these activities can be either structurally coordinated or uncoordinated but are designed to promote learning. This generalisation appears broader and fails to consider the importance of digital resources, tools, and technical assistance when implementing blended learning education.

Poon (2013) highlights the transformational ingenuity of BL as an academic ecosystem where a combination of face-to-face and online knowledge-sharing systems co-exist, enriching students' learning opportunities. The diagram below summarises my conceptualised factors that foster a perspective of the concept of BL within Poon's (2013) framework.

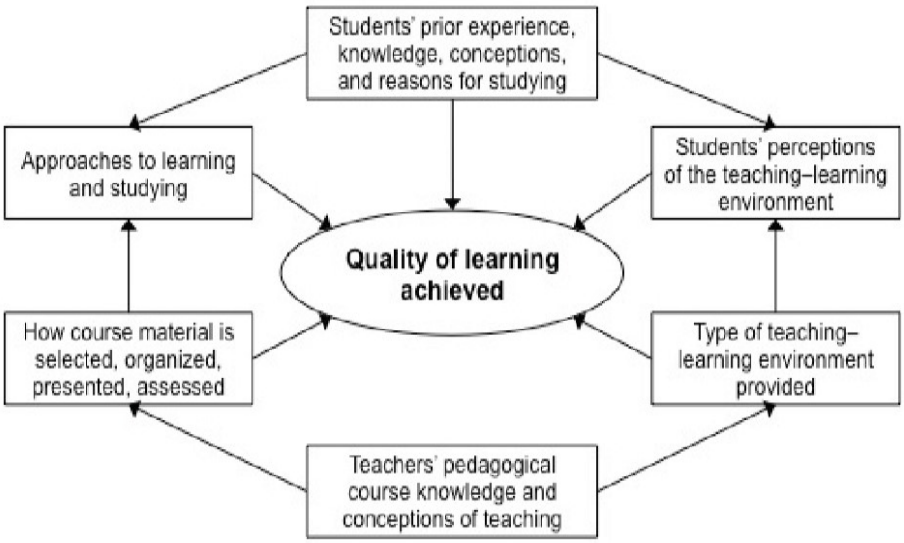

Figure 1: *Interplay perspectives on BL*

The crafted diagram elucidates the contributing factors that foster an understanding of the blended learning (BL) concept and the essence of each component in the agenda of quality learning and teaching through digital technology-integrated learning strategies.

Cronje (2020), Spring et al. (2017), and Picciano (2017) claim that BL integrates traditional and digital technology-mediated learning. However, Graham (2017) proposes a critical analysis of each role player's performance in this intricate combination, particularly in the learning and teaching space. Picciano (2017) further notes that social connection is necessary, highlighting the importance of discussing BL pedagogies that promote information access through personal urgency and social interactions. Hill and Smith (2023) and Cronje (2020) endorse the value-added nature of pedagogies and the significance of successfully incorporating digital technology resources into BL contexts to improve student comprehension. Notwithstanding the intricate nature of BL, the diverse pedagogical implications must also be considered.

According to Castro-Rodriguez et al. (2021), rapidly evolving technologies require an ongoing revolutionary approach to contemporary learning and teaching in higher education. This perception aligns with Nikou and Maslov (2021), as cited in Antwi-Boapong et al. (2022), who appraised BL as a powerful tool for enhancing student learning in both in-person and remote learning environments. Nikou and Maslov (2021) further identified institutional support, university teachers, support personnel, and student readiness as valuable and critical variables for successful BL implementation. Though the preceding authors' perspectives are convincing, reconceptualising and achieving an in-

depth comprehension of the concept are essential for attaining goals and enhancing learning experiences in the modern learning and teaching environment.

Among other researchers, Kumar and Pande (2017) and Antwi-Boampong et al. (2022) analysed blended learning (BL) as a paradigmatic learning framework that is participatory and leverages various teaching strategies to improve educational outcomes. Kumar and Pande (2017) argue that this tectonic shift involves the emergence of a learning paradigm (BL) to address context-centric, participatory-based, skills-development, situation-specific, collaborative, and action-oriented learning environments. Sharing a similar conception to that of Kumar and Pande, I also consider BL an emerging paradigm that firmly embraces collaborative and self-directed learning approaches, acknowledging that it may lead to the deconstruction, relearning, and reconstruction of some behaviours developed during traditional face-to-face classroom practices. According to Antwi-Boampong et al. (2022), BL is not a substitute for in-person or remote online models but subscribes to Boloko's (2021) definition of BL as a new curriculum facilitation paradigm that employs various media tools to enhance student participation.

The reviewed scholarly works situate the conception of BL within a broad spectrum that encompasses nearly all learning systems, raising ambiguities and challenges. Consequently, it is appropriate to conceptualise the BL model as lacking diverse instructional strategies and delivery methods. This scholarly disagreement limits BL's utility and conceptual understanding, despite attempts to explain traditional and online educational methods. Furthermore, discussions in the literature emphasise theoretical features while ignoring the instructional practices that form the fundamental foundation.

These researchers present viewpoints that endorse the concept of BL as the simultaneous engagement of online strategies in face-to-face environments. Additionally, it situates BL within various integrated instructional methodologies, spanning from traditional approaches to modern digital technology modalities. This perceptual framework, evident in the literature, highlights a lack of clear comprehension of the concept of BL. Reconceptualising and understanding the concept of BL is crucial for determining how learning and teaching practices are designed in the twenty-first century. As a result, I cannot entirely agree with the debate on BL as a context for both face-to-face and online learning, which encompasses a variety of activities, strategies, and models, incorporating digital technologies to illuminate the context of instructional media, recognising that online learning occurs within an interactive classroom space.

2.2 Pedagogies and underpinning learning theories

Ontological and epistemological underpinnings (philosophical assumptions) provide the fundamental principles for facilitating curriculum content that pervades the context of knowledge acquisition, construction, and development (Okeke & van Wyk, 2016; Creswell & Creswell, 2017; Mathotaarachchi & Thilakarathna, 2021; Addam & Omodan, 2022). The ontological and epistemological assumptions underpinning traditional theories (behaviourism, constructivism, cognitivism, and positivism) must give way to contemporary digital pedagogies of connectivism and other technology-infused learning theories that are fundamental for reconceptualising and understanding blended learning.

Early traditional perceptions and paradigms of the teacher as an all-knowing, all-powerful figure (teacher-centred), underpinned by behaviourism and other theoretical philosophies, are less relevant in a blended learning classroom. In technology-enriched education, there is a need to enhance the shift from a teacher-centred paradigm to a learner-centred and learning-centred approach (Bada, 2015; Duffy & Jonassen, 2013). This shift is critical when students develop the habit of self-directed, independent, and learning-directed cognitive methods (Allen et al., 2007). More crucially, situated cognition regards knowledge creation as effective due to inter/intra-connectedness. In essence,

situated learning involves the interaction of the individual and collaborative activity (community identity), which propels learning in a contextualised situation. Web search engines, discussion forums, and social media platforms help build community identity by focusing on real-world applications (Archambault et al., 2022).

Connectivism and other technology-infused learning theories are relevant and responsive to current educational practices (Pulham & Graham, 2018; Raju & Rajkoomar, 2016). Substitution, Augmentation, Modification, and Redefinition (SAMR), the Teaching Change Framework (TCF), and Technology Pedagogical Content Knowledge (TPACK) are included in these frameworks (Tarling et al., 2021). They refer to the digital education landscape, which allows learning and teaching to occur anywhere and at any time. Furthermore, the digital technology pedagogy environment encourages students to connect with multiple sources (networks) to build knowledge. In retrospect, I support Maulida et al.'s (2022) assertion that the blended learning style of curricular engagement fosters social experiences among university lecturers, students, and peers, thereby increasing learning and comprehension of the material content.

2.3 Insights into pedagogies

So far, discussions suggest that to develop a nuanced understanding of the concept of blended learning (BL), three pedagogical dimensions ought to be examined: the teacher-centred strategy (traditional culture), the learning-centred approach (adaptive online), and the learner-centred approach (constructivist). In each scenario, modern technological tools and resources are required to complement conventional teaching. Furthermore, enhanced involvement and social presence in online learning strengthen flexible delivery modes such as hybrid, flexible, or BL (Hrastinski, 2019).

In this context, Barnett (2014) observes that the classroom application of BL stems from a thorough reconceptualisation and understanding of the concept, models, and the relative strengths and limitations of various transformative pedagogies that lead to the subject of 'knowing application and knowledge acquisition.'

Winch (2018) and Barnett (2014) contribute to the discussion, arguing that knowing, doing, and being are centrally designed to foster critical thinking, problem-solving, and accurate knowledge acquisition, which remains valid. The phenomenon of "know-how" (the capacity to perform activities) in BL mode should not distract from the importance of understanding nature and pedagogical orientations (Winch, 2018; Maton, 2020). However, the fundamental issues include the incorrect selection of modes and models for curriculum facilitation, which denies students better learning opportunities through doing and being. I agree with Jnr et al. (2020) that BL encompasses several teaching methodologies and models for delivery using technology and relevant pedagogies to meet specific knowledge-sharing and information needs. Additionally, Raju and Roy (2022) established that BL involves assimilation and varied didactic approaches in asynchronous and synchronous practices.

In scouting for scholarships, I realised that the process of conceptual comprehension of the notion of BL and the supporting theories that inform pedagogical decisions needs to be unpacked and highlighted. As a result, university teachers and students are better positioned to advocate for educational designs and strategies that support BL integration in higher education classrooms.

2.4 Theoretical framework

The Community of Inquiry (CoI) framework stimulates understanding of collaborative learning and knowledge growth and provides a lens for unfolding the components of the BL idea and pedagogies. The study adopted the Gudapati (2021) modified version of Anderson's (2017) CoI framework, which focuses on inquiry-based learning and instruction. It emphasises the importance of student-teacher contact in the learning process. Furthermore, the CoI, encompassing physical integration with online

learning, examines behaviours and scaffolds experiences of BL education. The framework situates the educational experience at the intersection of three presences: instructional, social, and cognitive. However, in the adapted model, I prioritised the notion of BL and pedagogies, emphasising the vital role of the three presences in implementing BL in the classroom (Gudapati, 2021).

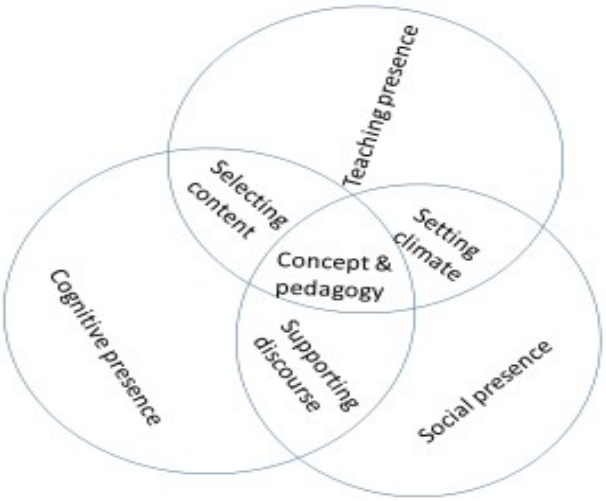

Figure 2: *Reimagined Community of Inquiry Framework.*

Collaborative learning and knowledge construction in self-directed mediums and innovative approaches are paramount in blended learning (BL). The three presences in the Community of Inquiry (COI) framework explain the relevance of all stakeholders in the academic space and contribute to improved conceptual understanding.

Teaching presence: Instructional design and organisation, discussion facilitation, and instructional guidance are fundamental for organising and foregrounding social and intellectual activities (Gudapati, 2021). The teacher promotes discourse by fostering a positive BL environment for interaction and diagnosing misconceptions. Consequently, the learning process—including design, management, and environment—receives direction. In this context, the university teacher enhances learning by recognising the importance of BL settings and organising instruction through productive interaction (Nikou & Maslov, 2021).

Social presence: Several studies have emerged with multiple interpretations and operationalisations. Therefore, there is no single, straightforward, and unified explanation of the phenomenon (Weidlich et al., 2022). This study is crucial in elucidating social presence and the importance of collaborative involvement in the BL setting. When BL involves social connections—whether physical or remote, digital technology-infused—the authenticity of interaction becomes critical. Connecting with learning and teaching partners enhances the inclusivity and sociality of the learning environment, which is essential for BL.

Cognitive presence: The ability to construct meaning through critical thinking, reflection, and discourse is grounded in BL. Learning through the inquiry process is operationalised in reflective higher-order thinking that extends beyond mere content knowledge acquisition (Gudapati, 2021). Being curious, searching for relevant solutions to problems, exchanging information, collaborating, brainstorming, making suggestions, and drawing conclusions occur in a well-orchestrated BL environment (Kilis & Yildirim, 2019).

The interdependence and reciprocity of the three presences result in higher learning outcomes, increased collaboration, improved engagement and support for various needs, an accessible learning environment, and a rethinking of the concept of BL. Interlinking these presences creates

opportunities for a straightforward, well-structured, and engaging course design and pedagogy. Furthermore, it enhances the building of communities of learning and promotes collaboration, critical thinking, and metacognition through self-evaluation, thus encouraging knowledge construction. Engaging the COI in the BL space encourages university teachers to create environments that foster dialogue and challenge interactive-collaborative learning, problem-solving, deep learning, and knowledge development, despite infrastructural deficiencies and rapidly evolving technology, as well as cultural, policy, and political interferences.

3. Methodology

This conceptual paper resides in an interpretivist paradigm and adopts a conceptual typology analysis to understand and interpret the meaning and context of the BL phenomenon. Hulland (2020) defines conceptual analysis as a literature review process that explores and analyses concepts, theories, and frameworks. Additionally, it involves organising complex information into digestible categories to promote analysis. In this process, the author collected relevant published articles on BL using a systematic approach to ensure thoroughness and reproducibility. The pragmatic process follows a systematic classification, categorisation, and identification of patterns in the scholarship that espouses concepts of BL and associated pedagogies (Jaakkola, 2020; Onu et al., 2016). In this study, the review involved critical thinking, reflection, and analysis guided by a theoretical perspective (COI) to inform the synthesis of the concept and pedagogies.

The use of a conceptual review provides a deeper understanding of the complex nature of the concept of BL, resulting in the reconceptualisation of the phenomenon (Jaakkola, 2020). Furthermore, the integrative review creates a platform for interactive engagement with perspectives and underlying theories, as well as insights into pedagogies. Despite the extensive literature on the subject, it provides a valuable reference point for analytical synthesis and interpretation of BL and pedagogies. Conceptual analysis is crucial in comprehensively interpreting the meaning and significance of the concepts and pedagogies in the literature (Onu et al., 2016). This culminates in gaining insights and identifying themes for conceptual explanation through the varied understandings shared in the literature.

4. Emergent Themes and Insights

In this conceptual paper, the individual scholarships were synthesised to identify high-level phenomenon-relevant themes that emerged from a careful evaluation. These themes include an in-depth understanding of the concept, blended learning environments, blended learning options, blended learning in real-time, academic agency, enablers for transformation, pedagogic agency, and the impact on classroom practice.

4.1 In-depth understanding of the concept

Effective implementation of blended learning (BL) in practice requires an in-depth understanding and application of its characteristics, principles, frameworks, attributes, and more. This understanding will assist in scaffolding 'the what', 'how', 'when', and 'why' for the need for blending. Although some scholars consider BL to be a mix of two or more different kinds of strategies, I argue that the BL concept in the digital technology era relates to the integration of face-to-face and technology-infused learning and teaching. It is, therefore, essential to conceptualise the BL concept to understand what BL is and what it is not. As discussed earlier, understanding the concept helps identify appropriate models, moving beyond a focus on physical or surface-level characteristics and pedagogical perspectives guided by well-defined conceptualisation (Graham et al., 2014).

Hrastinski (2019) shared various conceptualisations derived from literature, such as inclusive, quality, quantity, synchronous, and digital classroom, among others. According to Hrastinski, the inclusive conceptualisation combines instructional and delivery modalities, more precisely, the

media, instructional methods (pedagogy), and face-to-face and online instructions. This could be loosely interpreted as combining face-to-face and computer-mediated instruction. Does this mean that engaging with the learning management system in learning and teaching constitutes BL?

Improving quality through the thoughtful integration of classroom face-to-face experiences with online learning experiences constitutes another form of conceptualisation. Tan and Hew (2016) argue that blending should consider the advantages of both systems and support learning beyond the classroom, such as in flipped classrooms. Without compromising quality, the quality conception views BL as devoting significant time to online discussions with reduced face-to-face contact sessions. However, this is subject to the type of institution's registration, whether as a contact or distance learning accreditation.

The synchronous approach emphasises teaching and learning by involving remote students in real-time face-to-face classes through rich-media environments such as video conferencing, web conferencing, and virtual platforms. It may also include scheduled classes via Skype or Microsoft Teams on technological devices (resources) to collaborate across physical and virtual environments (Addam & Omodan, 2022; Bomer et al., 2017; Diep et al., 2017). The digital classroom concept highlights the use of online technology (e.g., flipped classrooms) in class or shortly before entering the classroom (Smith & Suzuki, 2015). In this situation, students access multimedia lessons via digital platforms during the learning and teaching process.

The preceding discussions demonstrate that BL encompasses several mixes, such as combining e-learning and traditional learning, online and face-to-face interactions, and integrating media, settings, theories, and learning pedagogies. Academics must comprehend the various conceptualisations and connect them with accessible resources, tools, and settings to ensure proper implementation through intelligent integration.

4.2 Blended environment to maximise learning

Digital technology increasingly supports learning and teaching in response to the changes and challenges facing higher education. The new generation of students exists in an environment with approaches and designs that cater to their educational needs and aspirations. Unfortunately, many institutions of higher learning are not responsive, partly due to a lack of resources, infrastructure, and innovative, flexible pedagogical models (Traus & Anderson, 2023; Addam & Omodan, 2022). Saghafi (2014) asserts that traditional face-to-face (f2f) and online models are severely limited. Unlike blended learning (BL) environments, which inherently offer opportunities and designs to examine the role of virtual learning and how the integrated space could foster social change alongside technological advancements. Addam and Omodan (2022) acknowledge that, although a face-to-face learning environment benefits from creating asocial presence, it suffers from time constraints, a lack of in-depth conversation, and unequal engagement from all members. In contrast, BL offers significant advantages in terms of time and place flexibility, allowing for greater participation from all learners and encouraging more profound critical thinking.

This suggests that a BL environment enhances learning experiences when appropriate activities are selected to optimise the benefits and minimise the limitations of traditional and purely online environments. Smith and Hill (2019), Antunes et al. (2021), and Armellini et al. (2021) argue that BL environments provide staff and students with flexible academic spaces, further promote student autonomy, and offer opportunities for self-directed learning and improved student satisfaction. Armellini et al. (2021) view it as potentially transformational, providing a foundation for rethinking and restructuring pedagogical approaches towards the implementation of student-centred methodologies. Therefore, it is reasonable to assert that BL has transformed the learning environment into a more sociable, adaptable, and personalised space.

4.3 Blended learning options

It is documented in the literature (McKenzie et al., 2020; Alberta et al., 2023; Naimi-Akbar et al., 2023) that blended learning (BL) options provide lecturers and students with flexible learning and teaching opportunities. The four fundamental options of BL are the underlying educational philosophies, delivery and interaction processes, space, and communication, as illustrated in the figure below.

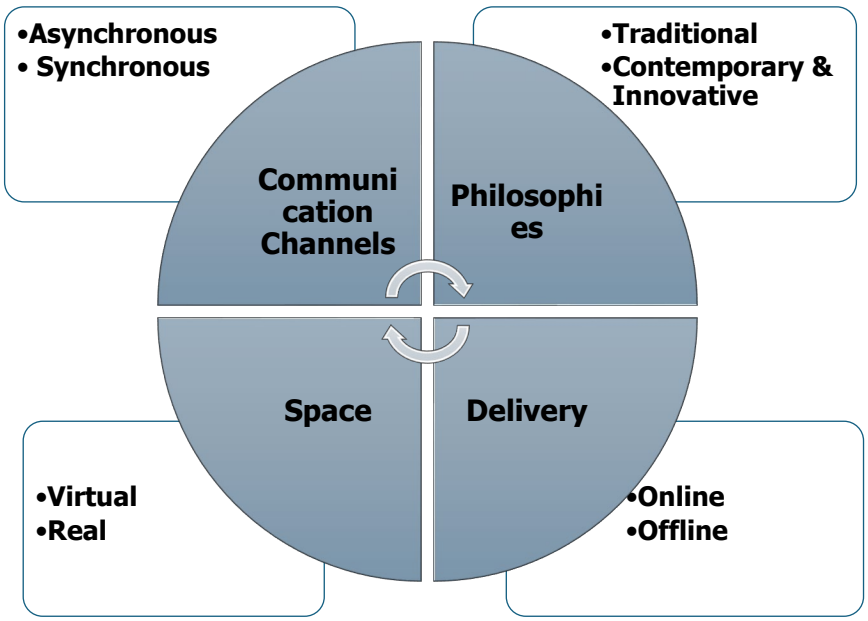

Figure 4: *Blended learning options*

Philosophies underpin BL's conceptualisation, integration, and implementation across all spheres of education. As a combination of traditional face-to-face and online pedagogies, BL operates within established philosophies (Behaviourism, Cognitivism, and Constructivism) as well as contemporary innovative digital technology philosophies, including connectivism. Primarily, the connectivism philosophy's digital technology-infused learning and teaching environment incorporates models such as SAMR, TPACK, and other progressive philosophies (TCF), emphasising consistent progress and comprehensive, constructive, and innovative implementation. Notably, these philosophies influence the design of learning environments and the selection of communication and delivery strategies.

Delivery focuses on mixed or blended learning, which can occur online, offline, or in both formats, and is informed by pedagogy, educational outcomes, and available resources. The rigidity associated with traditional face-to-face instruction, along with constrained physical locations and time-bound structures, no longer persists. E-platforms are utilised to facilitate learning, share content, and co-construct knowledge, making the exploration of blending strategies relevant for successful content access, delivery, and feedback.

The *Teaching and Learning* Space offers an effective platform for formal and informal engagements. This space transforms the experiences of lecturers and students through flexible, integrated collaborative mechanisms. A strategically designed virtual and real environment, differing in digital and physical (classroom) settings and levels of interaction, operates to meet the diverse needs of students. The virtual environment comprises three modes: synchronous (e.g. live-streamed classes), asynchronous (pre-recorded lessons), and hybrid (a combination of live-streamed and pre-recorded). The space significantly affects interactions between students, between students and lecturers, and with learning materials.

Communication between lecturers and students takes various forms, including direct (face-to-face discussions and conversations) and indirect (online forums, etc.). Furthermore, both asynchronous and synchronous modes are practical within the BL model. Appropriate Information and Communication Technology (ICT) tools foster practical confidence, trust, and mutual understanding between students and lecturers, allowing for multi-modal collaborative and poly-synchronous interactions, thus enriching the BL classroom experience.

These options are interrelated in several dimensions, creating a complex and dynamic system. Blending these options results in cohesive and effective environments, providing a unique learning and teaching experience.

4.4 Blended learning in real-time

This paper's conceptual analysis, "Blended Learning in Real-Time," combines traditional face-to-face instruction with online learning resources and tools that occur simultaneously, primarily in a synchronous modality. In this context, multimodal approaches foster interaction, including collaboration. The emerging communicative opportunities in physical classrooms, alongside online environments such as video conferencing, live streaming platforms, collaborative software, and interactive polling tools, enhance active learning experiences (Adling, 2022; Majeed & Dar, 2022).

The volatility and dynamism of digital technology in the modern learning and teaching environment necessitate an ever-changing knowledge, understanding, and application of blended learning in the classroom. Developing policies may be unrealistic in the rapidly evolving technological landscape, given the systemic and structurally limited role of academics in their classroom practice. Therefore, it is important to establish flexible frameworks that respond to changes and navigate the deployment of blended learning, focusing on academic reflexivity, autonomy, and agency in technology integration (Vahasantanen et al., 2020; Brew et al., 2020). In such situations, the co-construction of knowledge is flexible and open to the integration of new technologies into the learning and teaching space as it evolves.

4.5 Academic agency

In the context of this paper, academic agency refers to sources of agency, encompassing both student and lecturer agencies, including knowledge generation, learning analytics, learning connections and transfer, real-life learning settings, and learning that is adaptive to changing circumstances and exceedingly student-oriented. Understanding the concept of blended learning (BL) will lead to holistic thinking and critical conversations centred on individual (students and academics) and societal (classroom and institutional) outcomes (Stenalt & Lassesen, 2021). Enhancing the integration of BL in the classroom requires the agency of academics, recognising that new technologies have already piqued students' interest. Furthermore, university teachers' participation as change agents should be crucial in the digital classroom transformation and sustainability processes.

Many universities still operate within socio-historical settings and enabling frameworks that promote institutionalised identity and positional constraints, which foster access to power and resources, influencing the degree of flexibility and inclusiveness in the classroom. Idahosa et al. (2024) contend that adequate understanding will close the power gap between lecturers and students, aligning them on the same page regarding technology challenges and improving interactional dynamics in the classroom. Promoting interactional practices necessitates resetting university structures, cultures, and practices to create an environment conducive to academic agency, change, transformation, and the adoption of new technologies.

4.6 Enablers of pedagogical transformation

Integrating blended learning (BL) in education has sparked innovation and revolutionised teaching and learning in higher education. Attention, imagination, and pedagogical transformation must be

at the forefront of both individual and institutional vision. The discussion herein is based on enablers of transformation leading to the uptake of pedagogical interventions, such as initiative drivers (institutional level), shared vision (all stakeholders), working environment (resources and incentives), and classroom practice (transformative learning and teaching).

Initiative Drivers – The dynamism of technology infusion in universities requires the adoption of a structured and defined pedagogical approach aligned with the institution's mission, vision, and goals. This will serve as the foundation and guiding principle for integrating BL in practice (McCowan et al., 2022).

Shared Vision – The existence of a shared teaching and learning philosophy across the institution must be internalised in a coherent and extensive learning and teaching strategy and policy. It must be made clear that this strategy or policy should be supported by a philosophy that drives towards learning-centred, self-directed, and problem-solving outcomes, rather than content-oriented projects (Schendel et al., 2020).

Working Environment – Funding, infrastructure, and facilities, coupled with the massification of tertiary education, present acute challenges for many rural institutions. Inadequate funding, poor infrastructure, and insufficient facilities impede the effective implementation of pedagogical interventions. Large class sizes lead to diminished attention and inadequate resources to meet students' needs. BL pedagogical transformation is labour-intensive, time-consuming, and offers little material reward; thus, it requires dedication, enthusiasm, passion, and commitment as catalysts for implementing a practical pedagogical approach.

4.7 Classroom practice

The robust debate on definitions and perspectives (traditional and contemporary) has highlighted the benefits of adaptation and knowledge across different types, categories, and mixes that have implications for classroom practice. These mixes include e-learning alongside traditional learning, online alongside face-to-face (f2f) interactions, as well as various contexts, theories, and pedagogies of learning, all aimed at better understanding the concept and revisiting the paradigm. Higher Education Institutions (HEIs) are at the forefront of adopting and implementing blended learning (BL) in the classroom; therefore, simply understanding the concept may not translate into achieving academic outputs. Issues such as curriculum reforms and alignment are essential. Classrooms must be equipped with the necessary resources, infrastructure, and adequate professional development programmes to enhance the integration of new technologies in learning and teaching.

In practice, a deeper understanding of and unresolved tensions regarding all dimensions will emerge and need to be addressed (Lim et al., 2019; Saghafi et al., 2014). Grasping the concept allows for a thoughtful alignment of implementation with available resources, tools, and environments. Academics who understand the concept of BL engage in activities that aim to improve educational quality, equity, and increased access and flexibility for learners, ultimately enhancing learning outcomes (Lim & Wang, 2016). An effective design and implementation of blended learning are expected to improve students' learning while reducing teaching costs. However, in most classrooms, students lack active participation, and deep interactions are rarely observed, which limits the enthusiasm demonstrated (Larmuseau et al., 2018).

4.8 Pedagogic agency

Vahasantanen et al. (2020), Brew et al. (2020), and van Lanveld et al. (2017) suggest that academic perceptions, informed values, and behaviours play a critical role in fostering a profound understanding of the concept of blended learning (BL). The assumption that academics, due to their technological background and knowledge, are resistant to alternative innovation or adaptation to new trends and BL deployments is misguided (Antunes et al., 2021). Instead, the interplay between

reflexive interactions, deployment decisions, and agentic practice offers a dynamic process for constructing and reconstructing pedagogical transformation. Understanding this concept will invigorate academics' pedagogic agency and influence decisions regarding BL deployment and agentic practice. Notably, student interaction is also a crucial dynamic in the relationship between agency and structure, mediated through reflexivity, which focuses on the social actors deploying BL pedagogical approaches.

The capacity of university teachers to make deliberate, informed, and contextualised decisions about practices and strategies aimed at promoting and improving student learning is central to knowledge construction and academic development. Addam (2025) contextualises pedagogical agency in curriculum design and adaptation to meet students' needs, implementing teaching strategies that promote student engagement and participation in the learning process and environment. Furthermore, this includes designing and implementing assessments with meaningful feedback and maintaining a flexible and inclusive learning space. Nagel et al. (2018) advocate for creating conditions favourable to student independence and self-directed learning. In this instance, pedagogic agency enhances student learning and increases teacher satisfaction and professional development.

5. Conclusion

There has been a growing body of literature on the blended learning (BL) concept within the educational space. However, very little work has been conducted to examine the literature and share the understanding and conceptualisation of the concept and pedagogies for practical implementation in higher education. This conceptual review explores the understanding of BL and how it informs implementation by providing critical insights into dimensions from existing literature. It highlights areas that could contribute to the development of an understanding of the BL concept, pedagogical orientation, and its implementation. Additionally, the review examines how the reconceptualisation and rethinking of BL and pedagogies influence innovative classroom facilitation. The findings suggest that grasping the concept of BL leads to holistic thinking and critical conversation about digital transformation and sustainability in the classroom, encapsulating academic agency. The study proposes pedagogical realignment and reorientation that promote interactive practice and reset BL for quality and equitable education. The review also provides evidence of the enablers of pedagogical transformation that support the integration of BL in practice and adds to the understanding of the importance of the concept and pedagogies in today's rapidly expanding technological world. Adopting a Community of Inquiry (COI) lens contributes to the discourse on constructive reconceptualisation and understanding of BL, as well as implementation strategies and implications for higher education.

BL has revolutionised the academic landscape in higher education. Thus, the relevance of pedagogical transformation through various enablers, such as initiative drivers, shared vision, and a conducive working environment, enhances pedagogical agency for effective classroom practice. The reality remains that the 'what', 'when', and 'how' of BL implementation have significant implications for higher education. The dynamism of digital technology variations necessitates a real-time approach and application of resources and tools. Creating an environment that utilises various learning options to maximise BL integration is central to contemporary classroom practice. In this regard, the promulgation of policies may not be sufficient. Instead, frameworks that respond to technological change and the co-construction of knowledge should foster academic agency.

6. Recommendations

Learning is considered a self-directed process in which students actively participate rather than responding passively to lecturers and other learning agents. As a result, higher education authorities and stakeholders must develop adequate conditions to capitalise on students' enthusiasm for educational experiences and foster self-regulated learning. Understanding the concept of blended

learning (BL) could support improved quality education; however, adopting ethical norms to oversee the implementation process is critical, taking into account the institutions' context, vision, goals, and facilitation conditions. Management should establish policies and strategies for adopting technology; however, the rapidly evolving digital technological environment calls for frameworks that can be redefined as emerging technologies unfold. The study proposed further research to encourage the full utilisation of the potential of BL in the learning and teaching space and to contribute to the existing scholarship. Furthermore, institutions should enhance the quality of their deployed systems, information, and support services for effective BL integration.

7. Implications for Learning and Teaching in Higher Education

Adopting blended learning (BL), hybrid learning, or hyflex learning modes in higher education classrooms has implications for practice and pedagogy. The dynamics of integrating BL are complex; however, they can be mitigated when this notion is grasped, conceptualised, and supported by appropriate pedagogies. The study shows that higher education institutions (HEIs) must recognise the critical role of lecturers and students in the BL environment to provide a thorough understanding of mediated learning experiences (Anthony, 2022). In addition, a conceptual understanding may translate into technology acceptance, transformative curricula, inclusive learning strategies, radical thinking approaches, learning frameworks, and the realignment of pedagogies and relevant theories (such as the Community of Inquiry, task-technology, project-based, etc.).

Many authors (Anthony, 2024; Anthony et al., 2022; Zhang et al., 2022) suggest that comprehending the concept and frameworks will allow lecturers to reflect on their roles in enhancing pedagogies, technological integration, and overall student perceptions, thereby increasing learning and teaching outcomes. Consequently, universities must acknowledge the critical roles of teachers and students in the BL environment; thus, there is a need for adequate systems and mechanisms to foster an understanding of the concept. Additionally, universities must provide resources (hardware, software, tools), continual professional development, and financial support to successfully implement BL practices, alongside an understanding of the concept and pedagogies, coupled with flexible frameworks (not policies) tailored to the institution's vision, resources, and educational goals.

8. Declaration

Funding: This research did not receive any external funding.

Acknowledgements: The author made no acknowledgement.

Conflict of interest: The author declares no conflict of interest.

Data Availability Statement: This review is based entirely on publicly available data and information sourced from peer-reviewed articles, reports, and other academic publications cited in the manuscript. No new primary data were generated or analysed during this study. Readers may refer to the cited sources for detailed information.

References

Addam, B. (2025). Anatomy of blended learning integration in higher education: Reflections of academics in a comprehensive university. *International Journal of Learning, Teaching and Educational Research, 24(1),* 500–519. https://doi.org/10.26803/ijlter.24.1.25

Addam, B., & Omodan, B. I. (2022). Students' learning experiences with synchronised emergency remote online education. *Innovative Journal of Curriculum and Educational Technology, 11*(1), 47–58. https://doi.org/10.15294/ijcet.v11i1.55001

Adling, N. M. J. (2022). Flexible blended learning experiences of Filipino students in an English as a second language (ESL) learning context. *Language Literacy: Journal of Linguistics, Literature, and Language Teaching, 6*(1), 28–38. https://doi.org/10.30743/ll.v6i1.5104

Albeta, S., Firdaus, L., Copriady, J., & Alimin, M. (2023). TPACK-based blended learning as an implementation of progressivism education: A systematic literature review. *Jurnal Pendidikan Vokasi, 13*(1), 44-59. https://doi.org/10.21831/jpv.v13i1.51287

Allen, I. E., Seaman, J., & Garrett, R. (2007). *Blending in: The extent and promise of blended education in the United States.* Newburyport, MA: Pearson.

Anderson, T. (2017). How communities of inquiry drive learning and teaching in the digital age. *North Contact, 1*, 1–16.

Anthony Jnr, B. (2022). An exploratory study on academic staff perception towards blended learning in higher education. *Education and Information Technologies, 27*(3), 3107–3133. https://doi.org/10.1007/s10639-021-10705-x

Anthony Jnr, B. (2024). Examining blended learning adoption towards improving learning performance in institutions of higher education. *Technology, Knowledge and Learning, 29*, 1401–1435. https://doi.org/10.1007/s10758-023-09712-3

Anthony Jnr, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. E., Abdullah, A., & Baba, S. (2020). Predictors of blended learning deployment in institutions of higher learning: Theory of planned behaviour perspective. *The International Journal of Information and Learning Technology, 37*(4), 179–196. https://doi.org/10.1108/IJILT-02-2020-0013

Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Phon, D. N. A. E., Abdullah, A., & Ming, G. L. (2022). Blended learning adoption and implementation in higher education: A theoretical and systematic review. *Technology, Knowledge and Learning, 1* 1–48. https://doi.org/10.1007/s10758-020-09477-z

Antunes, V., Armellini, C. A., & Howe, R. (2021). Academic staff perspectives on an institution-wide shift to active blended learning. *Italian Journal of Educational Technology, 30*(2), 17–29. https://doi.org/10.17471/2499-4324/1248

Antwi-Boampong, A., & Bokolo, A. J. (2022). Towards an institutional blended learning adoption model for higher education institutions. *Technology, Knowledge and Learning*, *27*(3), 765–784. https://doi.org/10.1007/s10758-021-09507-4

Archambault, L., Leary, H., & Rice, K. (2022). Pillars of online pedagogy: A framework for teaching in online learning environments. *Educational Psychologist*, *57*(3), 178–191. https://doi.org/10.1080/00461520.2022.2051513

Armellini, A., & Rodriguez, B. C. P. (2021). Active blended learning: Definition, literature review, and a framework for implementation. *In* C. B. C. Padilla Rodriguez & A. Armellini (Eds.), *Cases on active blended learning in higher education* (pp. 1–22). IGI Global. https://doi.org/10.4018/978-1-7998-7856-8.ch001

Ashraf, M. A., Yang, M., Zhang, Y., Denden, M., Tlili, A., Liu, J., Huang, R., & Burgos, D. (2021). A systematic review of systematic reviews on blended learning: Trends, gaps and future directions. *Psychology Research and Behaviour Management*, *14*, 1525–1541. https://doi.org/10.2147/PRBM.S331741

Bada, S. O. (2015). Constructivism learning theory: A paradigm for learning and teaching. *Journal of Research & Method in Education*, *5*(6), 66–70. https://doi.org/10.9790/7388-05616670

Barnett, R. (2009). Knowing and becoming in the higher education curriculum. *Studies in Higher Education*, *34*(4), 429–440. https://doi.org/10.1080/03075070902771978

Barnett, R. (2014). *Thinking and rethinking the university: The selected works of Ronald Barnett*. Routledge.

Baykal, G. E., Van Mechelen, M., Wagner, M. L., & Eriksson, E. (2021). What FabLearn talks about when talking about reflection: A systematic literature review. *International Journal of Child-Computer Interaction*, *28*, 100256. https://doi.org/10.1016/j.ijcci.2021.100256

Bliuc, A. M., Goodyear, P., & Ellis, R. A. (2007). Research focus and methodological choices in studies into students' blended learning experiences in higher education. *The Internet and Higher Education*, *10*(4), 231–244. https://doi.org/10.1016/j.iheduc.2007.08.001

Bomer, M., Lee, M. J., & Dalgamo, B. (2017). Collaborative learning across physical and virtual worlds: Factors supporting and constraining learners in a blended reality environment. *British Journal of Educational Technology*, *48*(2), 407–430. https://doi.org/10.1111/bjet.12435

Borup, J., West, R., Graham, C., & Davies, R. (2014). The adolescent community of engagement framework: A lens for research on K–12 online learning. *Journal of Technology and Teacher Education*, *22*(1), 107–129. https://www.learntechlib.org/primary/p/112371/

Brew, A., Boud, D., Lucas, L., & Crawford, K. (2020). Hampering teaching excellence? Academics making decisions in the face of contradictions. *Studies in Higher Education*, 1–12. https://doi.org/10.1080/03075079.2020.1828327

Castro-Rodríguez, M. M., Marín-Suelves, D., López-Gómez, S., & Rodríguez-Rodríguez, J. (2021). Mapping of scientific production on blended learning in higher education. *Education Sciences*, *11*(9), 494. https://doi.org/10.3390/educsci11090494

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.

Cronje, J. (2020). Towards a new definition of blended learning. *Electronic Journal of eLearning*, *18*(2), 114–121. https://doi.org/10.34190/EJEL.20.18.2.001

Dakhi, O., & Irfan, D. (2020). Blended learning: A 21st-century learning model at college. *International Journal of Multi-Science*, *1*(8), 50–65.

Diep, A. N., Zhu, C., Struyven, K., & Blieck, Y. (2017). Who or what contributes to student satisfaction in different blended learning modalities? *British Journal of Educational Technology*, *48*(2), 473–489. https://doi.org/10.1111/bjet.12431

Duffy, T. M., & Jonassen, D. H. (2013). *Constructivism and the technology of instruction: A conversation*. Routledge.

Dyer, T., Aroz, J., & Larson, E. (2018). Proximity in the online classroom: Engagement, relationships, and personalisation. *Journal of Instructional Research*, *7*(1), 108–118. https://doi.org/10.9743/JIR.2018.10

Gudapati, B. (2021). Community of inquiry: A theoretical framework to promote epistemic engagement in education research for Caribbean community colleges. *A multidisciplinary academic journal for Jamaica and the Caribbean*, *1*(1), 21–34.

Hill, J., & Smith, K. (2023). Visions of blended learning: Identifying the challenges and opportunities in shaping institutional approaches to blended learning in higher education. *Technology, Pedagogy and Education*,*32*(3), 289–303. https://doi.org/10.1080/1475939X.2023.2176916

Hrastinski, S. (2019). What do we mean by blended learning? *TechTrends*, *63*(5), 564–569. https://doi.org/10.1007/s11528-019-00375-5

Hulland, J. (2020). Conceptual review papers: Revisiting existing research to develop and refine theory. *AMS Review*, *10*, 27–35. https://doi.org/10.1007/s13162-020-00168-7

Idahosa, G. E. O., Belluigi, D. Z., & Dhawan, N. B. (2024). "Going beyond the call of duty": Academic agency and promoting transformation for sustainability in higher education. *International Journal of Sustainability in Higher Education*, *ahead-of-print*. https://doi.org/10.1108/IJSHE-09-2023-0454

Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review*, ***10***, 18–26. https://doi.org/10.1007/s13162-020-00161-0

Jayanthi, R. (2019). A study about blended learning: Its importance and concept. *International Journal of Scientific Development and Research (IJSDR)*,*4*(4), 387–397.

Jewitt, C. (2014). An introduction to multimodality. In C. Jewitt (Ed.), *The Routledge Handbook of Multimodal Analysis* (pp. 15–30). Milton Park, Abingdon, Oxon: Routledge.

Kanuka, H., & Garrison, D. R. (2004). Cognitive presence in online learning. *Journal of Computing in Higher Education*, *15*(2), 21–39. https://doi.org/10.1007/BF02940928

Kilis, S., & Yildirim, Z. (2019). Posting patterns of students' social, cognitive, and teaching presence in online learning. *Online Learning*, *23*(2), 179–195. https://doi.org/10.24059/olj.v23i2.1460

Kumar, R., & Pande, N. (2017). Technology-mediated learning paradigm and the blended learning ecosystem: What works for working professionals? *Procedia Computer Science*, *122*, 1114–1123. https://doi.org/10.1016/j.procs.2017.11.481

Larmuseau, C., Evens, M., Elen, J., Noortgate, W. V. D., Desmet, P., & Depaepe, F. (2018). The relationship between acceptance, actual use of a virtual learning environment and performance: An ecological approach. *Journal of Computers in Education*, *5*, 95–111. https://doi.org/10.1007/s40692-018-0098-9

Lederman, D. (2020). Will a shift to remote teaching be a boon or bane for online learning? *Inside Higher* Education, *18,* 1–27. Retrieved 13 October 2024 from

Lim, C. P., & Wang, T. (2016). A framework and self-assessment tool for building the capacity of higher education institutions for blended learning. In C. P. Lim & L. Wang (Eds.), *Blended learning for quality higher education: Selected case studies on implementation from Asia-Pacific* (pp. 1–38). UNESCO.

Lim, C. P., Wang, T., & Graham, C. (2019). Driving, sustaining and scaling up blended learning practices in higher education institutions: A proposed framework. *Innovation and Education, 1*(1), 1–12. https://doi.org/10.1186/s42862-019-0002-0

Majeed, M., & Rehan Dar, F. (2022). Investigating the efficacy of blended learning in ESL classrooms. *Cogent Education, 9*(1), 35–53. https://doi.org/10.1080/2331186X.2022.2133500

Mathotaarachchi, K. P., & Thilakarathna, K. A. A. N. (2021). Philosophy of approaches in social sciences: Review of positivism, phenomenology and critical social sciences in qualitative research. *Technium Social Sciences Journal, 20,* 944–952.

Maton, K. (2020). Semantic waves: Context, complexity and academic discourse. In J. R. Martin, K. Maton, & Y. J. Doran (Eds.), *Accessing academic discourse: Systemic functional linguistics and legitimation code theory* (pp. 5–85). London: Routledge.

Maulida, D. S., Rahman, M. A., Handrianto, C., & Rasool, S. (2022). A review of blended learning as a model for improving students' paragraph writing skills. *Abjadia: International Journal of* Education, *7*(1), 59–72. https://doi.org/10.18860/abj.v7i1.15901

McCowan, T., Omingo, M., Schendel, R., Adu-Yeboah, C. C., & Tabulawa, R. (2022). Enablers of pedagogical change within universities: Evidence from Kenya, Ghana and Botswana. *International Journal of Educational Development, 90,* 1–10. https://doi.org/10.1016/j.ijedudev.2022.102558

McKenzie, S., Hains-Wesson, R., Bangay, S., & Bowtell, G. (2020). A team-teaching approach for blended learning: An experiment. *Studies in Higher* Education, *47*(4), 860–874. https://doi.org/10.1080/03075079.2020.1817887

Nagels, M., Abel, M.-H., & Tali, F. (2018). Focus on the agency of learners to innovate in pedagogy. In A. Visvizi, M. D. Lytras, & L. Daniela (Eds.), *The future of innovation and technology in education: Policies and practices for teaching and learning excellence* (pp. 27-40). Emerald Publishing Limited. https://doi.org/10.1108/978-1-78756-555-520181004

Naimi-Akbar, I., Weurlander, M., & Barman, L. (2023). Teaching-learning in virtual learning environments: A matter of forced compromises away from student-centredness? *Teaching in Higher Education*, *29*(8), 2095–2111. https://doi.org/10.1080/13562517.2023.2201674

Nikou, S., & Maslov, I. (2021). An analysis of students' perspectives on e-learning participation: The case of the COVID-19 pandemic. *The International Journal of Information and Learning Technology*, *38*(3), 299-315. https://doi.org/10.1108/IJILT-12-2020-0220

Okeke, C., & Van Wyk, M. (2016). *Educational research: An African approach*. Cape Town: Oxford University Press Southern Africa.

Onu, D., Kessler, T., & Smith, J. R. (2016). Admiration: A conceptual review. *Emotion Review*, *8*(3), 218-230. https://doi.org/10.1177/1754073915610438

Picciano, A. G. (2021). Theories and frameworks for online education. *A guide to administering distance learning*, *21*(3), 166-190. https://doi.org/10.1163/9789004471382_005

Poon, J. (2013). Blended learning: An institutional approach for enhancing students' learning experiences. *Journal of Online Learning and Teaching*, *9*(2), 271–288. https://jolt.merlot.org/vol9no2/poon_0613.htm

Pulham, E., & Graham, C. R. (2018). Comparing K–12 online and blended teaching competencies: A literature review. *Distance Education*, *39*(3), 411–432. https://doi.org/10.1080/01587919.2018.1476840

Raju, R. S., & Roy, M. (2022). An overview of the framework for the development of E-classroom toward e-learning. In T. K. Gandhi, D. Konar, B. Sen, & K. Sharma (Eds.), *Advanced computational paradigms and hybrid intelligent computing. Advances in Intelligent Systems and Computing* (pp. 633–639). Springer. https://doi.org/10.1007/978-981-16-4369-9_60

Roswell, J. (2013). *Working with multimodality: Rethinking literacy in a digital age.* Milton Park, Abingdon, Oxon; New York: Routledge. https://doi.org/10.4324/9780203071953

Saghafi, M., Franz, J., & Crowther, P. (2014). A holistic model for blended learning. *Journal of Interactive Learning* Research, *25*(4), 531–549. https://eprints.qut.edu.au/79150/

Saliba, G., Rankine, L., & Cortez, H. (2013). *Fundamentals of blended learning.* University of Western Sydney.

Schendel, R., McCowan, T., Rolleston, C., Adu-Yeboah, C., Omingo, M., & Tabulawa, R. (2020). Pedagogies for critical thinking at universities in Kenya, Ghana and Botswana: The importance of a collective 'teaching culture'. *Teaching in Higher* Education, *28*(4), 717–738. https://doi.org/10.1080/13562517.2020.1852204

Smith, J. G., & Suzuki, S. (2015). Embedded blended learning within an algebra classroom: A multimedia capture experiment. *Journal of Computer Assisted Learning, 31*(2), 133–147. https://doi.org/10.1111/jcal.12083

Smith, K., & Hill, J. (2018). Defining the nature of blended learning through its depiction in current research. *Higher Education Research &* Development, *38*(2), 383–397. https://doi.org/10.1080/07294360.2018.1517732

Spring, K., & Graham, C. (2017). Thematic patterns in international blended learning literature, research, practices, and terminology. *Online Learning Journal, 21*(4), 337–361. https://doi.org/10.24059/olj.v21i4.998

Stenalt, M. H., & Lassesen, B. (2021). Does student agency benefit student learning? A systematic review of higher education research. *Assessment & Evaluation in Higher Education*, *47*(5), 653–669. https://doi.org/10.1080/02602938.2021.1967874

Tan, M., & Hew, K. F. (2016). Incorporating meaningful gamification in a blended learning research methods class: Examining student learning, engagement, and affective outcomes. *Australasian Journal of Educational Technology*, *32*(5), 19-34. https://doi.org/10.14742/ajet.2232

Tarling, I., & Gunness, S. (2021). Educators' beliefs, perceptions and practices around self-directed learning, assessment and open education practices. In D. Burgos & J. Olivier (Eds.), *Radical solutions for education in Africa* (pp. 187–209). Springer, Singapore. https://doi.org/10.1007/978-981-16-4099-5_10

Truss, A., & Anderson, V. (2023). The navigational challenges of a blended learning approach to teaching in business and management. *The International Journal of Management Education*, *21*(1), 1–8. https://doi.org/10.1016/j.ijme.2022.100733

Vahasantanen, K., Paloniemi, S., Raikkonen, E., & Hokka, P. (2020). Professional agency in a university context: Academic freedom and fetters. *Teaching and Teacher Education*, *89*, 103000. https://doi.org/10.1016/j.tate.2019.103000

van Lankveld, T., Schoonenboom, J., Volman, M., Croiset, G., & Beishuizen, J. (2016). Developing a teacher identity in the university context: A systematic review of the literature. *Higher Education Research & Development*, *36*(2), 325–342. https://doi.org/10.1080/07294360.2016.1208154

Weidlich, J., Göksün, D. O., & Kreijns, K. (2023). Extending social presence theory: Social presence divergence and interaction integration in online distance learning. *Journal of Computing in Higher Education*, *35*(3), 391–412. https://doi.org/10.1007/s12528-022-09325-2

Zhang, Z., Cao, T., Shu, J., & Liu, H. (2020). Identifying key factors affecting college students' adoption of the e-learning system in mandatory blended learning environments. *Interactive Learning Environments*, *30*(8), 1388–1401. https://doi.org/10.1080/10494820.2020.1723113