J. Technol. Manag. Grow. Econ., Vol. 14, No. 2 (2023), pp. 63–73

CHITKARA

Journal of Technology Management for Growing Economies

Journal homepage: https://tmg.chitkara.edu.in/

Fostering Dynamic Learner engagement in the Era of Blended learning- A Systematic Review

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ARTICLE INFORMATION

Received: 20 April, 2023
Revised: 27 June, 2023
Accepted: 13 September, 2023
Published Online: 15 October, 2023

Keywords:
Blended learning, Learner engagement, Active participation, Pedagogical tactics

DOI: 10.15415/jtmge/2023.142007

ABSTRACT

Background: Blended learning, which integrates traditional face-to-face education with digital and online elements, has gained prominence in recent years as an efficient method to enhance student learning experiences. But it is worth noting that the completion rate of online and blended learning courses continues to be rather low, as indicated by research.

Purpose: The purpose of the current study is to understand the intellectual discussion around dynamic learner engagement in the era of blended learning so that the areas of improvement can be earmarked and suitable strategies can be made to bridge the gap between the expectations of the learners and the actual delivery of the course.

Method: A systematic review was conducted using a replicable search strategy. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 (PRISMA 2020) statement guided this study. Many keyword combinations were searched for in the title, keyword, and abstract fields, according to the search criteria to arrive at the final corpus of papers.

Result: The study found that in order to cultivate learners' engagement in blended learning, it is imperative to investigate the various aspects that impact learning engagement. Through a comprehensive analysis of existing scholarly literature, the present study has successfully discovered a range of both internal and external elements that exert a significant influence on the level of engagement exhibited by learners. Active participation by students and innovative pedagogical tactics emerged as significant aspects in a blended learning format, allowing designers and educators to provide targeted support for students.

Conclusion: The study provides clear insights for instructors into the various methods to strategize around in the blended learning environment format so that they can design better pedagogical tactics and increase learner engagement through active student participation.

1. Introduction

According to Alamri (2023), the incorporation of learning platforms and blended learning techniques has expanded the range of higher education opportunities and improved educational outcomes. Consequently, it has emerged as a significant avenue for education and training. Nevertheless, it is worth noting that the completion rate of online and blended learning courses continues to be rather low, as indicated by research conducted by authors (Reich & Ruipérez-Valiente 2019; Kizilcec *et al.* 2020). According to Bolliger *et al.* (2010), the observed low rates of course completion in online educational settings could perhaps be attributed to the absence of in-person social connection, resulting in feelings of isolation and, thus, an increased likelihood of not successfully finishing the course. The cognitive exertion and engagement of students play a pivotal role in e-learning, blended learning, and virtual learning. For instance, the extent to which students view videos and contribute to online discussions is significantly associated with their rate of course completion (Pursel *et al.*, 2016). In contrast to conventional learning methods, self-paced learning necessitates more student involvement, including a more profound comprehension of content and the cultivation of enduring pleasant emotions, in order to attain favorable outcomes (Chaw & Tang, 2019; Halverson & Graham, 2019). Prior research has indicated a positive correlation between increased student engagement and higher rates of course completion (Hone & El Said, 2016), as well as improved academic performance (De Barba *et al.*, 2016). The evaluation of employee learning engagement serves as a means for the training department to effectively monitor the learning process while also providing valuable guidance to course instructors (Fisher *et al.*, 2018; Patil & Shinde, 2010). Consequently, this approach has the

ISSN No.: 0976-545X(Print) ISSN No.: 2456-3226(Online); Registration No.: CHAENG/2016/68678

potential to mitigate the issue of high dropout rates in courses.

This systematic literature review sought to identify the diverse data types and analytical approaches related to learning engagement. The explicit objective was to establish a reference for subsequent research focused on measuring and analyzing students' learning engagement in blended learning environments. Blended learning has surged in popularity in recent years, with educational professionals lauding its advantages. Blended learning integrates traditional classroom instruction with innovative technologies to improve real-time engagement and contextual learning. Blended learning provides students with supplementary educational and interaction options. In-person training is offered, and students requiring more time to develop a new concept or technique may utilize online resources at any time.

Blended learning allows students to learn in a variety of ways, depending on their learning styles. Only face-to-face learning has the potential to develop a reliance on instructors. It is empowering and encouraging for students to have the ability to study both individually and in a face-to-face setting. Additionally, it enables trainers to handle training sessions more effectively, which is very useful when working with big groups of people. during face-to-face training sessions with participants. They can break the course to maximize efficiency, and they have the option to choose whatever they want to focus on during training sessions. Large-scale changes in organizational contexts need the constant learning engagement of employees. Individual and organizational growth is crucial to creativity and learning (Collis *et al.*, 2005), while others say it is a source of competitive advantage (Bonk *et al.*, 2007; Collis *et al.*, 2005). Technological advancement and the development of an "experience and understanding economy" have lately provided new opportunities for economic growth. It was because of this development that non-traditional learning options began to be used widely among students in academic and professional contexts, marking the transition from the Industrial to Information Ages (Liyanagunawardena *et al.*, 2014). Blended learning, also known as "hybrid learning," has been used effectively in both higher education and business in numerous cases (Bonk *et al.*, 2006a). Before "blended learning program," the phrase "hybrid course" was in use. Both terms are now interchangeable in higher education (Graham, 2009). "Integrated learning" and "multi-learning approaches" are two more Arabic words for blended learning (Al-Shahwan, 2015). According to Graham (2006), blended learning engagement may be offered at four different levels: institutional, activity, course, and program. Organizations make decisions on how to adopt blended learning at the institutional level. Activity-level blends, on the other hand, include instructors as well as stakeholders, and blended learning happens as part of the training process. The trainer should prepare ahead for course-level mixes. (Graham, 2006; Graham, 2009). People who employ a variety of learning and educational methodologies record high learner engagement.

2. Objective

The objective of the current study is to understand the intellectual discussion around dynamic learner engagement in the era of blended learning through the active participation of learners and the role of pedagogical tactics in the process. To promote active learner involvement within the context of blended learning, it is necessary to establish an educational framework that effectively engages students in their educational journey, leveraging the advantages of both face-to-face and online learning methods.

3. Search Strategy

A systematic review was conducted using a replicable search strategy. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 (PRISMA 2020) statement guided this study (Page *et al.*, 2021). The PRISMA 2020 statement comprises a flow diagram depicting the flow of information through the different phases of a systematic review as shown below. The Scopus database and others like EBSCO, Google Scholar, and ERIC were searched for the relevant studies. Many keyword combinations were searched for in the title, keyword, and abstract fields, according to the search criteria. The first search string comprised articles that were searched for "blended learning" AND "learner engagement" as the keywords after using the exclusion criteria of timeline, stage of publication, keywords, and language. The next search string comprised articles on "learner engagement" AND "pedagogical tactics" OR "active participation." While the third search string comprised "blended learning" AND "pedagogical tactics" AND "active participation." In all the search strings, exclusion criteria of timeline, stage of publication, keywords, and language were used systematically. In total, approximately 284 articles were retrieved from the online databases. Figure 1 below illustrates the article selection process, the number of articles retained at each stage, and reasons for article exclusion that met the selection criteria and were included in the final analysis. Approximately 67 articles were included in the final literature review.

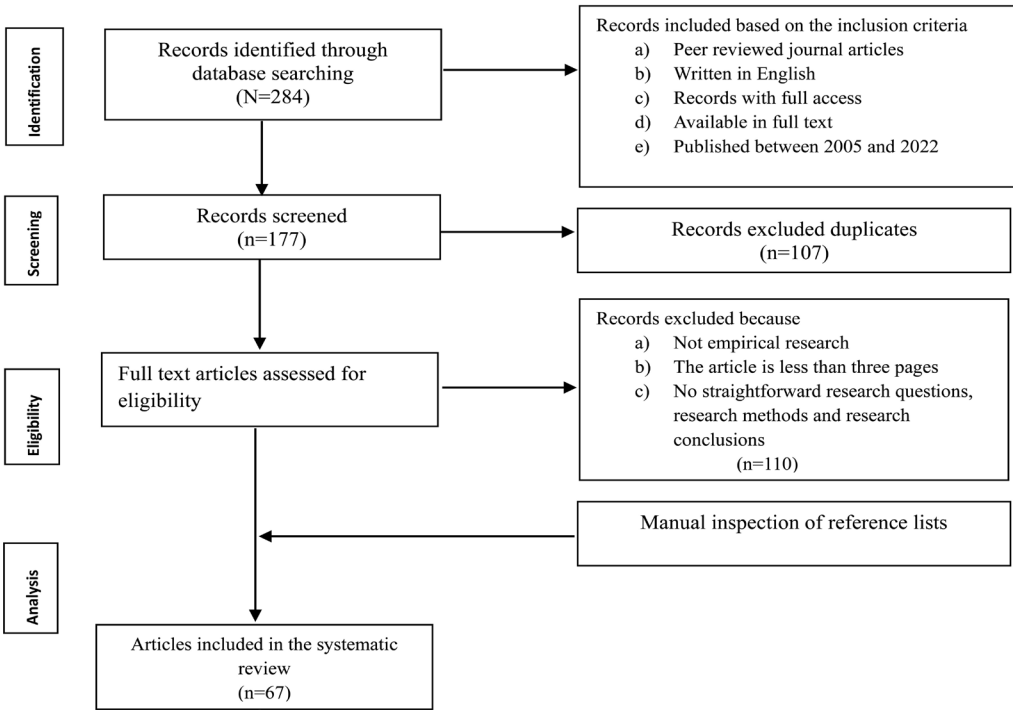

Figure 1: Flow Diagram – Data Extraction

4. Review of Literature

4.1. Blended Learning

Higher education institutions are increasingly looking for the adoption of new ways to improve education quality, enhance student engagement, and manage knowledge resources. Technological developments have a significant impact on education, and technology-mediated learning is steadily progressing, with blended learning being implemented in educational institutions (Paul & Richard, 2017; Prifti, 2022). Blended learning is an approach that integrates e-learning resources where a person can access a faculty-led setup methodology to impart training sessions. But conventionally, an interaction between trainer and trainee face-to-face is needed for its effectiveness. So, according to researchers (Boitshwarelo, 2009), for optimal student engagement, it is imperative that a blended learning curriculum incorporate these fundamental components. The primary objective of this study is to understand the scope and objectives of the blended learning initiative. Studies have also suggested that increased learning satisfaction may encourage learning engagement in an online learning environment, and perceived learning satisfaction predicts learning engagement among nursing students in this online learning course (Chan *et al.*, 2021).

Suhasini and Suganthalakshmi (2015) mentioned that there is a higher inclination for the significance and growth of training within organizations. In accordance with the principles of corporate governance, organizations have been concentrating on the effective governance of employee training and development activities. Employee training and development are now being embedded within talent management strategies, in which highly skilled employees are provided with the prospects to further enhance their capabilities so that their potential in the workplace can be maximized. To boost employee productivity, there is a growing demand for learning and training programs that focus on communication skills, critical thinking, and creativity. As a result, as technology has evolved, corporations are increasingly relying on computer-generated training, such as simulation or virtual training approaches. These sorts of training are becoming increasingly important as businesses look for methods to reduce costs and improve training effectiveness. According to Maxwell and Mucklow (2012), the growing effect of information and communication technologies (ICT) and the corresponding growth in adding e-learning sources are now acknowledged internationally for revolutionizing the training and learning of employees within organizations. As a result, organizations are combining collaboration possibilities and live mentorship with abundant digital resources (Breien & Wasson, 2021). Also, there is a trend towards "blended" or "integrated" approaches to training courses. The blended learning strategy provides firms with both the

cost savings of online training and the personal touch of classroom education. Kim (2009) explained that though several businesses see the potential of blended learning for bringing learning prospects closer to employees, there are several difficulties that must be tackled in the delivery of blended learning. It has been determined that instructional strategies that integrate learning with performance-based development must be implemented within blended learning programs by offering learners collaboration-based learning as well as realistic activities. A study by Kim (2009) revealed that many instructional strategies along with learning-oriented technological advancements exist for following a blended form of learning; however, businesses appear to be unaware of how various instructional tactics and technology interact to create a viable blended form of learning model. According to authors (Kintu *et al.*, 2017), the learning space is undergoing a variety of changes, such as the use of technologies and new pedagogies in blended learning. The learner engagement of blended learning is hampered by several fundamental issues. One key issue is identifying the ways users can use technology effectively and ensuring individuals' dedication, considering individual learners' characteristics and technological interfaces. It is identified that learners' attitudes are among the significant factors that affect learner engagement and are stimulated by motivation. Learner views regarding blended learning might impact overall efficacy, and such views form behavioral intentions that frequently lead to learning perseverance. Face-to-face encounters are included in blended learning setups, and positive student attitudes towards such sessions may indicate blended learning efficacy. Noe *et al.* (2010) explained that while blended learning programs provide exciting prospects for interacting with learners, these programs need to be implemented with meticulous evaluation of the focused abilities, organizational culture, and adequate managerial support, according to a number of papers on the third generation learning model. A highly active learning environment, facilitated by managerial support, according to research, minimizes the number of mistakes by employees. Although the term "blended learning" is often used, there is a considerable misunderstanding as to what it implies (Oliver & Trigwell, 2005). In a critical assessment, it concluded that the phrase mixed learning simply implies mixing two or more different forms of learning. They stated that almost anything may be classified as mixed learning because of the extent of their explanations. Although much of this discussion and theoretical work about mixed learning has grown in the past twenty years (Driscoll 2002; Garrison & Kanuka, 2004; Graham, 2006; Oliver & Trigwell, 2005). The learning demands and preferences of each student are likely to differ. A group of specialists has put up a complete agenda with transformative and creative mixed research subjects that can enhance efficiency (Garrison & Kanuka, 2004; Picciano, 2009). Compared with traditional classrooms, research finds that blended learning enhances success, commitment, and happiness for employees and students (Dziuban & Moskal, 2011; Dziuban, 2011) and improves and develops the feeling of community among students and employees. Those who have succeeded in mixed learning programs highlight the need for institutional support for course creation and participation, engagement, and planning. In the 1960s, technology-based education on mainframes and minicomputers became a viable alternative to instructor-led instruction.

A blended form of learning is typically an educational environment in which information is given and imparted both online and in person (Garrison & Vaughan, 2008). In other respects, both classrooms and distance learners benefit from the adaptability that a blended learning environment may provide. On a vertical level, it refers to combining (or integrating) a variety of instructional techniques and technology into a single and unique delivery model to improve learning outcomes and achieve goals. When learning technology is utilized to achieve both goals, it is referred to as blended learning. The assembly is where the magic happens. According to authors (Horn & Staker, 2011), blended learning allows students to choose their own course and adhere to face-to-face learning interactions simultaneously. Both face-to-face and online learning have disadvantages, but in this arrangement, they can complement one another. Face-to-face learning provides social perspectives, such as the depth of personal interactions and the spontaneity of responses that are difficult to obtain in lengthy online learning, whereas online learning provides flexibility in learning, cost savings, and the ability to access online resources whenever desired. For instance, the blended learning model integrates technology into learning tools to maximize online and face-to-face instruction and learning for a deeper understanding. Before implementing a learning model, it is necessary to assess the students' level of preparedness. Adams *et al.* (2020) stated that identifying students' readiness, competence, and requirements is crucial. In addition, according to Slameto (2010), preparedness is the criterion for continuing a learning process. Therefore, authors Eldeeb (2019) and Tang and Chaw (2013), classified six aspects of blended learning, including learning flexibility, online learning, learning administration, technology, classroom learning, and online interaction. In other words, students' preparedness can be determined based on several factors that indicate how well they are following the learning process. According to the preceding explanation, when students have a high level of preparedness, they are better able to adapt to any situation, including an abrupt shift in the learning model. In this regard, the researchers

examined prior research on the readiness of students for the implementation of blended learning in the learning process.

Blended learning approaches' strength rests in their capacity to improve the trainee's learning experience. Studies show that mixed learning reduces failure rates, boosts participation, improves learning, and promotes engagement. Mixed learning blends the greatest features of schooling with online education to enable learners to attend at their own pace. In a blended learning course, for example, a student who grasps a subject faster than his peers can continue without waiting, while a learner who requires more time is not compelled to move forward before completely understanding the material. It is proven to be a scalable learning and development strategy that works for a wide range of trainee groups. Blended learning is not an afterthought that adds yet another costly educational layer. On the contrary, it is a fundamental endeavor to rebuild and reconstruct the structure of learning and teaching, as well as the methods of learning and teaching.

Three fundamental assumptions of mixed learning are described by Garrison and Vaughan (2008):

- Combining classrooms and web-based learning with care.
- The creation of a conceptual process for the design to maximize trainee involvement.
- Traditional class contact hours are being restructured and converted.

4.2. Learner Engagement

Learner engagement, or trainee dedication, in the blended learning programs is very important to increase the participation. (Ogunyemi *et al.*, 2022). The definition of learner engagement is the participation of trainees with all the senses with the course curriculum, faculty, and other batchmates (Deng *et al.*, 2020). Behavioral engagement refers to the degree of student participation in educational activities, including behaviors such as attentiveness, inquiry, and active involvement in discussions within a blended learning framework (Jung & Lee, 2018). Social involvement is evident in the interactions among students and between students and their professors. Theoretical frameworks of social constructivism propose that the acquisition of information is enhanced by social interaction. The success of assignments to be done by individual trainees remotely also increases if he interacts with other trainees. The concept of the "zone of proximal development," which denotes the gap between a student's current abilities and their prospective capabilities when engaging in collaborative efforts with peers, has been examined in multiple scholarly publications (Hrastinski, 2009; Veluvali & Surisetti, 2022; Woo & Reeves, 2007). Virtually, interaction will be more effective when trainees share the experience with each other. Observational learning can take place in the context of online courses when students engage with arguments presented by their peers or the instructor. These serve as exemplars for the purpose of education. Analogous procedures may transpire in the case of collaborative documents, wikis, and other related mediums. The shift towards increased engagement and participatory learning with students is of significant importance in the realm of online education. This is due to the inherent difficulties posed by the lack of synchronicity, or the inability to be online simultaneously, and the lack of placeness, or the absence of physical proximity, which must be effectively addressed (Anderson, 2004). In order to surmount these obstacles, scholars suggest the development of instructional programs that foster three key attributes: social presence, community, and meaningful interaction (Bigatel *et al.*, 2012; Hill *et al.*, 2009). The imperative of maintaining high levels of learning engagement among students enrolled in blended learning is crucial to mitigate dropout rates. A substantial body of literature in blended learning underscores the centrality of engagement, with various studies proposing indicators and measurement methods. The prevailing approach involves self-report methods, frequently utilizing scales like the Engagement Scale, while log files, text data (e.g., discussion forum posts), and multimedia technologies such as facial analysis have also been employed to measure engagement (Batra *et al.*, 2022; Deng *et al.*, 2020; Liu *et al.*, 2023).

4.3. Active Participation

Engagement, which has been looked at as a state of increased attention and engrossment, here the role of participation becomes extremely important not only in the cognitive dimension but also in social and behavioral dimensions (Hiver, 2022). In educational contexts, engagement is defined under this energy in action rubric as "constructive, passionate, willing, emotionally nice, and intellectually focused participation with educational activities in the classroom. There have been several recommendations for current and future work that have the potential to advance our understanding of the landscape of L2 learners involvement and active participation in learning and will undoubtedly add definition to the field, thereby strengthening its utility for practice. The first of these ongoing tasks is to focus on the nature of engagement and its relation to instruction, active participation, and learning conditions. As reviews of definitions, subtypes, and strands of engagement research show (Hiver *et al.*, 2021; Obergriesser & Stoeger, 2020), there is still a need for greater consistency and clarity in operationalizing and measuring participation. The characteristics listed briefly above may

be helpful for understanding the nature of participation. In American classrooms, active participation is typically highly appreciated and frequently regarded as a reliable sign of students' learning engagement. Therefore, active participation is required and/or graded by many college lecturers. The association between oral involvement, other factors, and student engagement was examined in research (Frymier & Houser, 2016). There was a strong correlation found between engagement and active participation. It was discovered that participation was linked to learning markers and study motivation. It was less common among really nervous pupils and more common when graded and with teachers who were seen as being immediately nonverbal. Although the conceptual definitions of engagement are presently in a state of flux, particularly in the language education domain, there seems to be a consensus that engagement is closely linked to heightened attention, active participation, and meaningful involvement in a learning task (Mercer & Dörnyei, 2020; Philpp & *Duchesne, 2016; Wang et al* ., 2022). Literature indicates that blended learning can enhance access to education and increase flexibility for students. However, the reported dropout rates indicate that student participation in blended learning programs is a concern. Scientifically valid knowledge about how factors that help students participate in blended learning programs are related directly to the extent of active participation, which is necessary for quality improvement of these blended learning programs. This knowledge can help professionals determine what they need to improve in their institution and how to prioritize the improvements (Blieck *et al*., 2019).

4.4. Pedagogical Tactics

An important research study offered an approach for getting students to take responsibility for documenting their level of active participation and explore the active learning framework to teaching that might best support this approach to participation documentation. (Peterson, 2021). According to the researcher, active participation in a blended learning program is always a difficult item to measure because of the nature of the format. With a little creativity and an active learning atmosphere, however, this vital element of participation can be better ascertained and developed. From a pedagogy perspective, student-centered documentation of participation appears to have fomented the desired outcomes—preparation to participate, active partaking in course discussions and exercises, applying course information immediately outside of course confines in personal and professional situations, and offering students the opportunity to take ownership and enumerate their participation levels in the course. Other studies (Carman, 2005; Lahza, 2022) provide an example of how learning analytics methods can be employed towards the development of effective pedagogical systems and, more broadly, technological educational solutions that support learner-centered and data-driven learning at scale. Findings should inform best practices for integrating learner sourcing activities into course design and shed light on the relevance of tactics and strategies to support teachers in making informed pedagogical decisions. The more the participation, the more the engagement for trainees. Sahin and Shelley (2008) pointed out a direct connection between trainees' engagement with the course's content, the experience, and learning results, telling highly effective engagement within blended learning. . Another research study (Digout & El Samra, 2023) examines interactivity and pedagogical techniques in education. Recognizing the significance of active student participation and engagement, the chapter examines various strategies and tools that can enhance interactivity and facilitate meaningful learning experiences. It discusses the transition from traditional inert learning methods to more interactive and participatory approaches, made possible by technological and pedagogical advancements. The advancement of technology is an onset to many new avenues and tools for learning and teaching, and it is the coalescing of these various technologies with particular pedagogy or andragogy that has helped to popularize BL. However, when an institution makes the critical choice of delivery methods, it is pertinent that the university consider various success factors. One in particular is a student-centered approach that entails the need to understand the students as the beneficiaries of learning and the support system they need to help them learn (Dzakırıa *et al., 2022*).

5. Conclusion

In order to cultivate learners' engagement in blended learning, it is imperative to investigate the various aspects that impact learning engagement. Through a comprehensive analysis of existing scholarly literature, the present study has successfully discovered a range of both internal and external elements that exert a significant influence on the level of engagement exhibited by learners. Internal factors pertain to the inherent characteristics of learners, which are typically consistent, but some may be subject to modification due to external circumstances, such as learners' emotions, attitudes, levels of knowledge, and cognitive capacities. External factors encompass several parts of the course that are independent of the learners' traits, including but not limited to pedagogical methods or tactics, obstacles, and utilization of technology. External factors, including motivation to actively participate and meticulously designed pedagogical methods, are shown to enhance learner engagement. A

cohesive design captivates students in course activities, augmenting both behavioral and cognitive engagement. Peer and instructor interaction and feedback facilitate a comprehensive approach to problem-solving, enhancing social and emotional involvement. The study promotes a holistic approach that incorporates both internal and external factors in comprehending techniques to improve learner engagement. Although modern technologies are crucial in 21st-century blended learning platforms, their simple application does not ensure the attainment of targeted learning results. The simultaneous improvement of technical elements and the fostering of active participation and initiative are considered essential for effective blended learning experiences.

This systematic research review provides pedagogical insights from dual perspectives to assist blended learning faculty in designing and implementing instructional activities, as well as to aid instructors in tracking students' learning trajectories. In course design, it is advisable to place increased emphasis on students' learning satisfaction by increasing student participation. A demonstrative approach entails integrating a post-class survey link to obtain real-time data regarding the learning experience. Given the difficulty of substantially changing student attributes, blended learning designers should concentrate on enhancing instructional activities and innovative pedagogical tactics. This may involve promoting behavioral and social participation through enhanced forum discussions and the integration of incentives such as medals, rankings, and certifications through innovative methods like gamification. Likewise, emotional engagement can be enhanced by incorporating captivating micro-videos, whereas cognitive engagement may be fostered through activities like note-taking and quizzes. Strategies involve utilizing k-means clustering to categorize pupils according to their learning engagement, facilitating customized education. The direct measurement of student engagement levels can identify individuals with insufficient involvement, necessitating action and alerts. Furthermore, modifications to course material and pedagogy may be implemented based on the overall learning engagement trends identified amongst students.

The literature evaluation included more than 65 publications examining the internal and external aspects affecting involvement in blended learning. The investigation revealed four elements of learning engagement in this environment, with behavioral engagement evident through observable actions, including post-class activities. The study highlighted the influence of internal and external influences on learning engagement, offering significant insights for blended learning designers and instructors. Learning engagement has proven to be a significant indicator of the learning environment, allowing designers and educators to provide targeted support for individual students and to enhance their pedagogical methods accordingly. The importance of interaction between instructors and peers in the learning process is linked, which further brings out the significance of active participation by the students in a blended learning environment.

6. Limitations

Just like any other study, this study also has its limitations. Firstly, the study selection criteria excluded literature published in specific languages and conference papers. Additionally, the search was confined only to the Scopus, Google Scholar, EBSCO, and ERIC databases, thus potentially resulting in the oversight of a few relevant articles that may be available in other databases like Web of Science, Elsevier ScienceDirect, and others. To address these limitations, future research should broaden the search scope to ensure a more comprehensive gathering of information.

Acknowledgment

The authors declare that there are no acknowledgements for this research paper.

Authorship Contribution

Both the authors contributed equally to all the aspects of the manuscript.

Funding

The author received no external funding to conduct this study.

Declaration

Authors hereby declare that this research paper, is an original work conducted by the author. All sources and references have been appropriately acknowledged, and the work has not been submitted or published elsewhere.

Conflict of Interest

The authors declares no conflict of interest.

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Journal of Technology Management for Growing Economies

Chitkara University, Saraswati Kendra, SCO 160-161, Sector 9-C, Chandigarh, 160009, India

Volume 14, Issue 2 **October 2023** **ISSN 2456-3226**