

UNDERSTANDING THE LEARNING SPACE, A REFLECTION ON BLENDED LEARNING IN HIGHER EDUCATION: A BIBLIOMETRIC ANALYSIS

Thoko Poppy Mahlangu

Curriculum and Social Studies Division, University of the Witwatersrand (South Africa)

Abstract

Over the past years, learning in Higher Education was predominantly the traditional face-to-face type of learning. Blended learning has been adopted as the relevant approach to teaching and learning, based on the lesson learned during the COVID-19 period. Blended learning promotes both face-to face and online teaching and learning. Eventually, this means adopting a new learning space in higher education. The concept “learning space” refers to a full range of spaces in which learning occurs: that is from real to virtual learning, and from the classroom to chat rooms. Blended learning necessitates an understanding of the learning space and design, pedagogy and curriculum, and their relation to the learning space. The learning space is critical for the realisation of learning outcomes. Online learning cannot replicate everything of value in the face-to-face experience of learning. The researcher’s reflection on the blended learning approach is, therefore, guided by the conceptualisation of learning as acquisition, learning as participation, and learning as knowledge creation. She reflects on trends in blended learning, and this was aided by an extensive literature review that addresses blended learning in higher education, and the bibliometric analysis she conducted. Further, she employed a qualitative methodology and analysed the data, using thematic analysis and the bibliometric analysis. This paper, therefore, discusses both the positive and negative effects of blended learning on students. This study is significant in the sense that it improves lecturers’ implementation of blended learning, which would translate into developing essential online and face-to-face learning pedagogy, as institutions of higher learning globally have adopted blended learning.

Keywords: *Blended learning, learning space, teaching, learning, higher education.*

1. Introduction

Technological advancement has largely contributed to the introduction and implementation of blended learning across the globe. Harper et al. (2024) have reported significant changes in higher education institutions across the globe, especially on the academic landscape, due to the COVID-19 pandemic. Accordingly, Harper et al. have highlighted that the most significant change in this regard, has been the abrupt shift from traditional classroom teaching and learning to online learning, as the lockdown restrictions compelled higher education institutions to shut their campuses.

With a shift from face-to-face learning, remote or digital learning became an integral part of higher education (He et al., 2023). Generally, in almost all the countries, this shift was attributed to the COVID-19 pandemic. The effectiveness of the traditional classroom teaching and blended learning is influenced by several factors. According to Ait Daoud et al. (2024), the term “blended learning” is used more frequently in today’s education cycles. Similarly, Mohamed (2024) states that blended learning has undergone some notable shift in its application over time. Furthermore, Chilton et al. (2023) point out that much has been learned about higher education institutions and how they could best provide blended learning environments, especially during crises like COVID-19, as well as during “normal” times. However, the scholars (Chilton et al., 2023) assert that access to technology, and the ability to use it, are crucial for the success of remote learning.

Castro (2019) argues that the aim of designing blended learning is to improve the efficacy of traditional classroom teaching and learning. Ultimately, Mahmood et al. (2024) postulate that blended learning is an innovative and more efficient way of learning, as it transcends the boundaries of space and time, and broadens possibilities. Furthermore, blended learning is seen as an emerging and crucial mode that offers additional activities for the reinforcement of learning. Du et al. (2022), postulate that blended learning is a student-centred model, where teachers play a guiding and supporting role of assisting students to use the existing knowledge reserved to learn, comprehend, and internalise new knowledge. According to Mohamed (2024), the shift noted here acknowledges the significance to foster an active and engaging learning environments.

2. Research aims and objectives

The study aimed to answer the main question:

What are the major trends in implementing blended learning in Higher Education?

The main objectives of the study were:

1. to map out the research focus on blended learning in higher education in the last 10 years.; and
2. to identify global trends in scientific research on blended learning in Higher Education.

3. Method and data collection

The researcher conducted a bibliometric analysis to explore the implementation of blended learning in higher education institutions mainly to identify trends in blended learning. To achieve this, the researcher critically reviewed co-occurring keywords. She retrieved the data from the Scopus database.

The search was restricted to article title, abstract, and keywords, using the Boolean “OR” - “AND”. Therefore, the researcher used the search string “blended learning” AND “higher education institutions” OR “universities”. This search produced 5 062 documents.

The search was refined to focus on the years 2013 to 2024 and included subject such as social sciences and arts and humanities, and the type of document was limited to article, and the language restricted to English only. This final search yielded 1 594 documents. The researcher analysed the data retrieved from Scopus, using the VOSviewer.

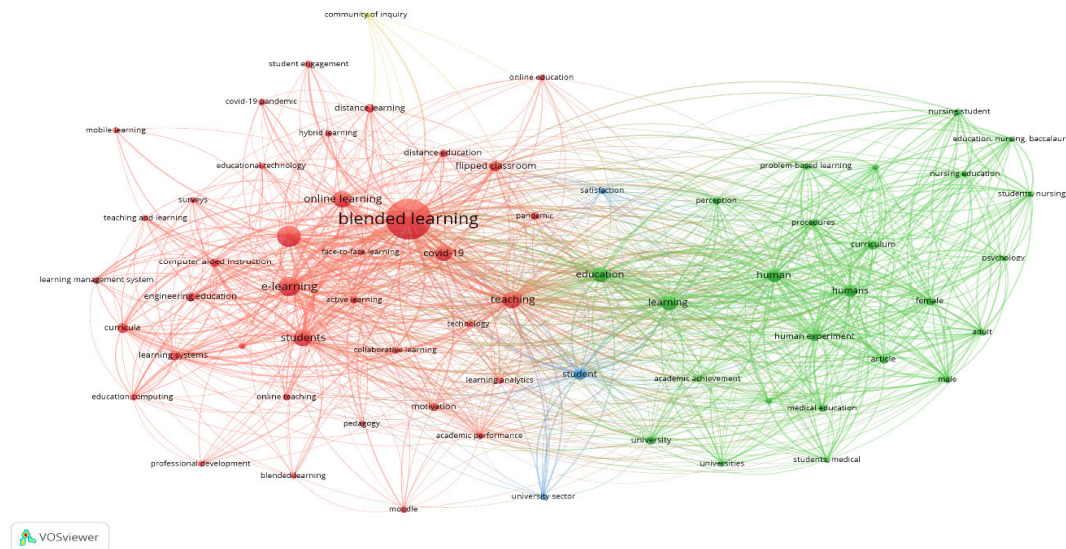
4. Bibliometric analysis and results

4.1. Keyword co-occurrence

The objective was to map out the research focus on blended learning in higher education in the last 10 years. This keyword co-occurrence could explain the research hotspots in the field over a specific time. These keywords would enable the identification of the important themes in blended learning in higher education and observations around the trending concepts in blended learning.

Co-occurrence in this study refers to the frequency with which a particular keyword appears with other keywords. The 67 co-occurring keywords are displayed in Figure 1 below.

Figure 1. Network Visualisation of co-occurring keywords



4.2. Cluster 1: Blended learning as a learning space

The first cluster consisted of 38 items. The researcher needs to point out that her discussion of the co-occurring keywords was also guided by the emphasis of the literature on blended learning regarding these keywords. The co-occurring keyword “collaborative learning” emphasises the importance of collaboration during teaching and learning. However, the type of collaboration emphasised is immaterial: this could be student-student collaborations, or student-teacher collaboration. Interestingly, Guo (2024) postulates that the significance of collaborative learning is emphasised: hence, the role of this

collaborative learning is considered crucial to knowledge construction. The appearance of the co-occurring keyword “pedagogy” reveals the importance of the process of teaching and learning, irrespective of the mode of delivery. Hence, Anderson (2020) argues that the term “pedagogy” does not refer to the mere deployment of the methods and learning techniques. The scholar (Anderson, 2020) further postulates that effective pedagogy equips students for life through the development of their personal, intellectual and social resources. The scholar is of the view that good pedagogic practice encourages student engagement with highly considered forms of ideas, knowledge, ways of thinking and forms of discourse, and practices relevant to every individual’s context.

Another important co-occurring keyword was “flipped classroom”. It is noteworthy that Danker (2015) explains that the flipped classroom enables the redesign of large lectures into active-learning classes, made of small groups. Danker also highlights that active learning in small groups facilitates student engagement, where they could participate, develop higher-order thinking skills, and receive feedback. Interestingly, Danker also found that the flipped classroom approach promotes individualised learning. According to the scholar, the flipped classroom fosters an environment that increases the interaction between teachers and students, and enables student engagement through practice and application.

Another trend is student engagement. In this regard, Yang and Ghislandi (2023) maintain that student engagement is a qualified proxy for quality learning and teaching. This is confirmed by Mohamed (2024), who argues that combining face-to-face learning with a blended learning framework has revealed an increase in student engagement as well as collaboration with instructors and peers. Accordingly, Mohamed argues that blended learning facilitates the creation of an interactive and dynamic learning space: hence, fostering active engagement among students, resulting in enhanced academic achievement.

Wang et al. (2017) sum up the argument made in cluster 1. The scholars argue that education is no longer something that is imposed externally on students, or just forced onto beings: rather it must emanate from students themselves.

4.3. Cluster 2: Academic achievement and problem-based learning

This cluster contained 25 items. The keyword “academic achievement” occurred in both clusters 1 and 2. Therefore, the importance of students achievement in blended learning cannot be over-emphasised. As Mahmood et al. (2024) show, numerous studies have recently explored the impact of the incorporation of blended learning on student academic performance. Furthermore, the study conducted by Mahmood et al. (2024) revealed that a blended learning approach, with some targeted effort, enhances students performance. Moreover, the scholars argue that this was influenced by the enabling opportunities that students had been afforded, such as collaboration facilities through online mediums, and better interaction, which contribute to increased learning.

Problem-based learning, affords students an opportunity to become active constructors of knowledge. Generally, problem-based learning is considered one of the most important elements of high-order thinking, and develops students’ critical thinking. Students who are engaged in problem-based learning more often display the skills and the ability to make decisions. The appearance of the keyword “problem-based learning” confirms Mahmood et al.’s (2024) assertion, who supported previous studies that a blended learning approach promotes higher-order thinking better than traditional teaching practices.

4.4. Cluster 3: Student satisfaction

This cluster has three items only: namely “satisfaction”, “student”, and “university sector”. Student satisfaction with the teaching and learning process is critical, since it might contribute to student attitude to learning, which could impact academic achievement. In their study, He et al. (2023) found that teacher support facilitates student course engagement, and consequently, student satisfaction.

Some of the important factors that contribute to student satisfaction in teaching and learning are feedback and academic performance. The scholars are also of the view that improved feedback mechanism fosters student motivation as they feel acknowledged and more engaged in the learning process. The study conducted by Chilton et al. (2023) revealed that students appreciate remote learning in other context, but that this should be complementing and should not necessarily supersede face-to-face mode of delivery. Ultimately, Chilton et al. warn that HEIs and teachers should be dynamic and flexible in their interactions with students and acknowledge that this is not a one-size-fits-all model.

4.5. Cluster 4: Community of inquiry

“Community of inquiry” was the only co-occurring keyword that was displayed under the last cluster. This study confirms Castro’s (2019) findings, wherein most of the trends that were identified from a pedagogical perspective consisted of models, frameworks, as well as practices at individual and group level: for instance, student-centred approaches, active learning, flipped classrooms, peer

collaborative learning, and communities of inquiry. However, most of these trends fall under the second cluster as discussed above.

Progressively, Teane (2024) states that cognitive presence as part of the theory of a community of inquiry refers to the extent to which individuals could construct and confirm meaning through sustained discourse and reflection: this speaks to what is referred as knowledge construction. Accordingly, Castro (2019) notes that the core elements of communities of inquiry under practices at group level include among other things, social, teaching, and cognitive presence. This confirms an assertion by Yang and Ghislandi (2023), who clarified that the community of inquiry framework argues that teaching presence, cognitive presence, and social presence are necessary for an enriched online learning experience.

5. Discussion

Pei et al. (2024) maintain that for two decades, blended learning has been considered one of the fastest-growing trends in higher education. It is noteworthy that blended learning, if implemented correctly, would promote student-centred learning, through problem-solving learning, engagement, collaboration, and active learning: hence also enhancing student motivation and satisfaction with teaching and learning, and academic achievement. Notably, in blended learning students for instance, construct knowledge, based on their experience and as they interact with peers and content. This confirms Mahmood et al.'s (2024) findings that problem solving, engagement, and active learning are pivotal in the blended learning approach, wherein students are interpreting and exploring information, instead of passively receiving it. Hence, Mahomed (2024) has recommended that educational institutions should utilise blended learning to further improve student participation and engagement in learning.

Above all, blended learning presents itself as a different learning space. Moreover, the pedagogy, teaching, and learning unfold in a manner that would ensure that everything is student-centred. As Wang et al. (2017) contend, in a blended learning environment students are responsible for actively constructing and engaging in different cognitive activities. This means that they are actively engaged in discussing, creating, thinking, reflecting, collaborating, and investigating.

It is important to note that “curriculum”, “teaching and learning”, and “perception” as co-occurring keywords also suggest that lecturers should plan to implement a blended learning delivery mode, based on their knowledge of their students’ different learning experiences, as blended learning allows for a personalised learning experience. This finding support the results of a study conducted by Ait Daoud et al. (2024) that suggested that lecturers should consider the different learning styles of their students when designing and delivering blended learning courses. The most important advantages of blended learning is that it allows for student flexibility: students can access course materials anywhere, and at anytime (Mahomed, 2024). One great benefit of technology-mediated learning is that it affords individuals extended opportunities to acquire the skills and the rich knowledge: hence, it creates a more dynamic and inclusive educational environment. Similarly, Onah et al. (2022) note increasing students’ autonomy, students’ control of the study environment and their studies, and flexibility as some of the advantages of blended learning.

Besides the great advantages that blended learning presents in teaching and learning, like promoting active learning and student-engagement, it also has some disadvantages. Teane’s (2024) study revealed that a lack of resources; like the shortage of data projectors, computers, and other gadgets make the use of online mechanisms challenging. Additionally, access to data and the internet was also a challenge (Teane, 2024). Notably, Wang et al. (2017) found that there is a great demand for information technology skills from both teachers and educational administrators. This confirms the findings of a study conducted by Teane (2024) that the acquisition of technological literacy enables teachers and students to engage in online modes of delivery. The findings in this regard are in line with Teane’s (2024) findings: the scholar suggests that teachers at higher education institutions must be the first to receive training in online skills. On the other hand, Pei et al. (2024) warn that instructors must use these communication technologies with caution in blended learning. Interestingly, Teane (2024) maintains that according to Fullan’s theory of change, lecturers who adopt the blended learning approach become agents of change. However, Onah et al. (2022) warn that higher education institutions should not expect students to be equally effective in a particular new mode of learning. The scholars argue further that support is required to ensure students’ adjustment and the development of their practice of self-regulation for learning.

This study has limitations. The researcher limited her search scope because she relied heavily on a single database (Scopus). The researcher is of the view that further qualitative data on students’ perceptions of blended learning would ensure valuable contributions to scientific research.

6. Conclusion

To answer the research question, the researcher analysed the data obtained using VOSviewer. Hence, she could identify a large set of the existing trends on blended learning delivery, based on the different or multi-disciplinary research evidence. Lecturers could contribute positively towards students' learning experiences and enhance their academic achievement if they implement the appropriate blended learning approaches.

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