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REVIEW: STUDENTS' ENGAGEMENT IN BLENDED LEARNING

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ABSTRACT

One of the success factors in blended learning is student involvement. As a result, the use of technology to influence student engagement and the efficacy of learning experiences is worth investigating. This research aims to find out what type of student involvement is in the blended learning model. Student involvement includes three aspects, namely behavioral, cognitive, and emotional aspects. There are many learning management systems used to carry out blended learning, including schoology, canvas, quipper, and others. This research uses a literature review method. Data was collected from the Scopus database. Data filtering with inquest and inclusion criteria. The findings; In various investigations on behavioral, emotional, and cognitive participation, not all of the data indicated that student involvement in blended learning increased. Other publications may not identify certain categories of engagement, yet evidence indicates improved engagement in blended learning. One article discovered behavioral, cognitive, and affective engagement. This study also demonstrates improved student participation in blended learning. This research can be continued by expanding the database and period.

Keywords: engagement, narrative review, behavioral, cognitive, affective

ABSTRAK

Salah satu faktor keberhasilan blended learning adalah keterlibatan siswa. Oleh karena itu, penggunaan teknologi untuk mempengaruhi keterlibatan siswa dan efektivitas pengalaman belajar layak untuk diselidiki. Penelitian ini bertujuan untuk mengetahui seperti apa tipe keterlibatan siswa dalam model blended learning. Keterlibatan siswa mencakup tiga aspek, yaitu aspek perilaku, kognitif, dan emosional. Ada banyak aplikasi yang digunakan untuk melakukan blended learning; schoology, classe, quipper, dan lain-lain. Penelitian ini menggunakan metode tinjauan pustaka. Data dikumpulkan dari basis data Scopus. Penyaringan data dengan kriteria penyelidikan dan inklusi. Temuannya; Dalam berbagai penyelidikan tentang partisipasi perilaku, emosional, dan kognitif, tidak semua data menunjukkan bahwa keterlibatan siswa dalam pembelajaran campuran meningkat. Publikasi lain mungkin tidak mengidentifikasi kategori keterlibatan tertentu, namun bukti menunjukkan peningkatan keterlibatan dalam pembelajaran campuran. Satu artikel menemukan keterlibatan perilaku, kognitif, dan afektif. Studi ini juga menunjukkan peningkatan partisipasi siswa dalam pembelajaran campuran. Penelitian ini dapat dilanjutkan dengan memperluas database dan rentang waktu.

Kata kunci: keterlibatan, tinjauan naratif, perilaku, kognitif, afektif

INTRODUCTION

In recent years, higher education institutions have shown high attention to improving student academic performance through the use of innovative technology that offers new ways to deliver and produce qualified university education (Deng & Tavares, 2013; Sulistyanto, 2023). Educational settings that combine ICT applications with face-to-face learning are often called blended learning models.

Learning on campus is also inseparable from digitalization. Digitalization of Education is the process of using and utilizing digital technology in learning as a whole, starting from the education system, and curriculum to administrative tools. The digitalization of education is intended to make it easier for teachers, teachers, and students to participate in activities in the classroom. The digitalization of learning is expected to be able to overcome the diversity of educators' ways of delivering material and students' learning experiences.

Blended Learning is one of the techniques used in digitizing learning. The term Blended Learning is a combination of traditional learning and electronic learning environments. In blended learning, e-learning tools, both computer-based and network-based, are used for lessons, lectures, and training sessions, which are often conducted in real-world classrooms with the ability to connect (Adiguzel et al., 2020). Bervell et al. (2020) show that the Learning Management System (LMS) is one of the technologies that enables blended learning in distance learning.

Research results (Sukirman et al., 2022) show that educational programs are substantially more effective after employing blended learning than they were previously. Other findings (Attard & Holmes, 2022) show that the use of technology expands students' opportunities to engage in mathematics learning by providing various access pathways and methods. The use of various digital tools increases the behavioral and emotional engagement of students at the undergraduate

level, whereas the cognitive and emotional engagement of graduate learners is mainly targeted through sharing experiences and co-constructing learning between students (Heilporn et al., 2021).

Student engagement is a multidimensional construct that includes three aspects, namely behavioral, cognitive, and emotional aspects. The behavioral aspect shows the actions and actions carried out directly by students on campus, for example, attendance, participation in learning activities, obeying rules, and doing assignments. The cognitive aspect shows the quality of students' cognitive processes and learning strategies for campus assignments, for example, willingness and persistence to learn, self-regulation, and challenges. The emotional aspect refers to a sense of belonging to the campus, interest, perception of the value of learning, and positive and negative reactions to teachers, friends, and campus activities.

The involvement of students in learning activities is one of the challenges faced by the world of education, especially educational institutions for educational staff or educational faculties. Current teacher education also determines teacher quality. Teacher education involves several techniques and procedures to prepare students, and prospective teachers who are efficient in delivering subjects. Teacher education must prepare them with knowledge and skills that can assist in teaching effectively (Mannathoko, 2013). In recent years, teaching using traditional techniques cannot meet the needs of individuals and society. Therefore, teachers must explore innovative teaching techniques that utilize modern technology (Bilen, 2015).

This research uses a narrative literature review method. Reviews are carried out by compiling and presenting the results of previous research in the form of narratives or stories. The author explains and interprets various research findings relevant to a particular topic using an approach based on narrative analysis. This research aims to 1) determine students' cognitive involvement, 2) determine students' behavioral involvement, and 3) determine students' emotional involvement in blended learning. This research is also important to conduct to determine the effectiveness of blended learning in terms of student involvement.

According to Quevedo (2011), Blended-learning can be interpreted as a combination of traditional learning and e-learning; Blended learning combines web-based instruction, video, audio, synchronous, and asynchronous communication with face-to-face learning. In addition, Gomes & and Duart (2012) state that blended learning refers to the inclusion of e-learning materials in the design and delivery of lesson materials through face-to-face settings. Meanwhile (Vaughan et al., 2017) argue that blended learning is a good combination of online and face-to-face learning. The basic principle is that face-to-face and online activities are optimally integrated into unique learning activities that are appropriate to the intended educational context and objectives. Thus, researchers can conclude that blended learning is a learning technique that combines face-to-face techniques with online techniques. This opens up a wide range of possibilities for redesigning traditional classrooms that have limited reach. Time limitations that generally occur in the classroom can be overcome by delivering material online. Teachers can use simulations, tutorials, assignments, and assessments tailored to achievement targets.

Blended learning is a learning method in the era of knowledge, where teachers act as facilitators, motivators, mentors, and consultants. Teachers also act as 'classmates' where they share ideas and share knowledge with students (Zainuddin et al., 2019). This Blended or Hybrid method emphasizes students to learn openly, and flexibly according to their needs, critically to solve problems, and orientate the empirical world with real action through learning experiences. Blended Learning has four characteristics, namely: (1) learning that combines technology; (2) a combination of face-to-face, independent, and online learning; (3) a combination of effective learning, and (4) teachers and parents as facilitators and supporters (Faizah et al., 2021). There is evidence that the use of blended learning/hybrid designs impacts the teaching and learning process in different ways.

Various definitions of learner engagement have emerged in the educational literature. The term student engagement is used to describe different variations: from timely studies to studies that investigate the quality of effort, interest, and willingness to participate in learning activities (Kuh, 2009; Kuhn, 2018). The level of student engagement has also been indexed by cognitive, affective, or behavioral criteria (Chapman, 2003). Cognitive criteria assess the extent to which students expend mental effort in learning tasks. Affective criteria assess a learner's level of investment in, and emotional reaction to, a learning task. Behavioral criteria assess the extent to which learners participate actively in the relevant learning tasks presented.

Although there is agreement regarding the relationship between student engagement

and learning outcomes and researchers agree that the construct of engagement is multi-dimensional, there are varying opinions about the amount and type of student engagement that exists (Fredricks et al., 2016). Behavioral, cognitive, and emotional engagement are the types of engagement primarily discussed in most of the literature.

An article was published in 2021 with the title "The Use of e-learning Tools in Blended Learning Approach on Students' Engagement and Performance". This research uses a correlational descriptive design with research findings showing that respondents prefer the blended learning approach because of its flexibility in accessing content online and are very proficient in using digital devices (Etom et al., 2021). Next is the article entitled "Enhancing Student Engagement Using a Blended Learning Approach: Case Studies of First-Year Undergraduate Students" with mixed methods experiments. This study shows that listening to student voices through a blended learning approach helps increase student engagement, thereby increasing student participation in shaping and redesigning teaching and learning to engage them inside and outside the classroom (Shohel et al., 2020).

(Gao et al., 2020a) conducted research entitled "The effect of blended learning platform and engagement on students' satisfaction—— the case from the tourism management teaching". The method used is a quantitative method with an instrument in the form of a questionnaire. The research results show that: (1) course satisfaction with blended learning is influenced by emotional involvement and perceptions of the excitement of the blended learning platform; (2) perceived usefulness, ease of use, and interaction indirectly influence course satisfaction through emotional engagement; (3) perceived usefulness has a stronger direct influence on students' cognitive and emotional engagement in blended learning. Adams et al., (2020) conducted research with the title "Blended learning engagement in higher education institutions: A differential item functioning analysis of Students' backgrounds".

The method used is non-experimental quantitative research with questionnaires. The findings of this study show students from engineering and medicine are highly engaged in blended learning activities compared to students from social sciences and natural sciences.

The four relevant studies above show that there has been a lot of research on student involvement in blended learning. Research on the same topic using the narrative literature review method has never been carried out. This shows that the research that will be carried out with the title "Review: Student Involvement in Blended Learning" is something new.

Research Review: Behavioral and Emotional Engagement of Students in Blended Learning aims to find out the type of involvement and the extent of student involvement in blended learning. Student involvement both behaviorally and emotionally in the Blended Learning learning model. Research begins by looking for new topics. The next step is to study articles relevant to the research topic to look for gaps. After the topic is determined, the researcher studies the methods that will be used in the research. Researchers study theories relevant to the topic and research methods. After that, data collection was carried out followed by data analysis and discussion. The final step is to prepare a research report in the form of an article.

RESEARCH METHOD

The review model chosen is a narrative review. The narrative review method aims to identify and summarize previously published articles, avoid duplication of research, and look for new areas of study that have not been researched (Ferrari, 2015). The narrative review method involves reading various books, journals, and other publications to gather information about a particular topic or problem which will then be used by researchers to create new scientific papers (Marzali, 2016). All literature used for this research comes from the Scopus database.

The literature review is structured in stages or stages. There are four steps involved in conducting a literature review (Rahayu et al., 2019), namely: (1) choosing the theme that will reviewed; (2) tracking and selecting appropriate/relevant articles; (3) conducting literature analysis and synthesis; and (4) writing planning reviews. Engagement keywords AND "blended learning" is a term used together with the boolean operators AND, OR, and NOT. The search was limited to works published between 2010 and April 2023. Literature was collected from the Scopus database.

Table 1. Database and search words

Data Base	Search word	Number of articles
Scopus	*Engagement* AND "*blended learning*"	35

Literature Selection

When selecting literature/journals, inclusion and exclusion must be determined

because this can help focus on the relevance of the research to the topic. Inclusion criteria can be determined by suitability to the research objectives, while exclusion criteria can be identified by not conforming to the research objectives. The first step is to mark keywords and then proceed with checking the list of references taken from the first search results. Then the cycle is repeated. In each article, only the essence/results are taken that follow the objectives of the thesis. Once most of the journals are obtained, the next selection is processed and the process is recorded in a summary diagram.

Inclusion and Exclusion Criteria

International journals were the inclusion criteria used by the researchers in this analysis. Access to journals worldwide is available through the publish or perish database in Scopus. Engagement AND "blended learning" is a term used in conjunction with the boolean operators AND, OR, and NOT. The search was limited to works published between 2010 and April 2023, and only considered research articles from journals whose full texts were freely accessible and used IMRAD (Introduction, Method, Results and Discussion) style.

Literature that did not meet the criteria to be used as a research sample was excluded from this study. Journals with publication years before 2010, journals that cannot be accessed in full (full text) or for free, research articles, and journal writing styles that do not follow the IMRAD (Introduction, Method, Result) format were excluded from this study. There are 12 articles from 35 articles are eligible for review.

Data processing

At the data processing stage, the articles that have been collected are sorted based on search keywords, namely involvement and blended learning. Articles with the same research methods and findings were collected and synthesized. A synthesis matrix that is maintained based on key research on an issue is one of the strategies used in synthesis (Ramdhani et al., 2014). This synthesis matrix is a good starting point for future research. According to Rahayu et al. (2019), a synthesis matrix is a table or diagram that allows researchers to organize and categorize various arguments from various articles and combine various aspects to form a broad impression or conclusion about the entire article. To organize literary sources and combine them with different perspectives, synthesis metrics are used.

RESULT AND DISCUSSION

The results of data collection from the Scopus database and article selection, 12 articles were found that were suitable for review. Articles eligible for review will be used to answer research questions.

Discussion

Forms of student involvement in blended learning were found in several articles reviewed. Behavioral, cognitive, and affective involvement was found in the article written by (Pyo & Lee, 2022). Statistically significant differences in statements about online listening activities between the two groups for all behavioral, cognitive, and affective engagement. Specifically, no significant differences were observed in statements about offline listening activities for the three constructs in academic engagement, meaning that control group students were highly engaged in offline activities compared to online activities.

Other forms of involvement are cognitive, emotional, and behavioral involvement (Adams et al., 2020; Gao et al., 2020b; Lane et al., 2021; Machumu & Zhu, 2019; Sanjeev & Natrajan, 2019). In general, student involvement in blended learning has increased and has had a positive impact. However, in an article titled Comparing Undergraduate Nursing Student Academic Engagement and Achievement in Traditional versus Blended Learning Models ENAS (Saad et al., 2021). It was found that the application of the "blended learning model" had a positive impact on students; academic achievement while there is no difference in academic engagement.

Findings from articles that discuss cognitive, emotional, and other behavioral involvement are Students' conceptions of learning approaches and their engagement in blended learning environments (Machumu & Zhu, 2019). The findings in this article are different in that there is a significant negative relationship between students' conceptions of learning approaches and their involvement in BLE learning activities. The deep approach is a significant negative predictor of BLE learning activities while the surface approach is an insignificant negative predictor of BLE learning activities. This research proposes an appropriate redesign of BLE learning activities to encourage a deep learning approach by students.

The article entitled Exploring Undergraduates' Learning Engagement via BYOD in the Blended Learning Classroom (He & Zhao, 2020) found that there is only one type of student engagement, behavioral. The results of learning behavior analysis on the learning

platform system and interviews after the 16-week course showed that BYOD in the classroom increased student engagement in blended learning classes.

Table 2. Eligible articles

Authors/Years	Title	Kinds of engagement
(Pyo & Lee, 2022)	Academic Engagement and Task Completion in L2 Listening through Mobile-Assisted Blended Learning (MABL) in Higher Education	behavioral, cognitive, and affective engagement.
(Alrushiedat & Olfman, 2013)	Aiding Participation and Engagement in a Blended Learning Environment	-
(Adams et al., 2020)	Blended Learning Engagement In Higher Education Institutions: A Differential Item Functioning Analysis Of Students' Backgrounds	cognitive, emotional, and behavioral engagement
(Saad et al., 2021)	Comparing Undergraduate Nursing student academic engagement and achievement in traditional versus Blended Learning Models ENAS	cognitive, emotional, and behavioral engagement
(Huang et al., 2022)	EFL learners' engagement in different activities of a blended learning environment	cognitive and emotional engagement
(Lane et al., 2021)	Engagement and Satisfaction: Mixed-Method Analysis of Blended Learning in the Sciences	cognitive, emotional, and behavioral engagement
(Shohel et al., 2020)	Enhancing Student Engagement Using a Blended Learning Approach: Case Studies of First-Year Undergraduate Students	-
(He & Zhao, 2020)	Exploring undergraduates' learning engagement via BYOD in the blended learning classroom	behavioral engagement
(Pye et al., 2018)	Investigation of face-to-face class attendance, virtual learning engagement and academic performance in a blended learning environment	cognitive, emotional, and behavioral engagement
(Sanjeev & Natrajan, 2019)	Role of blended learning environment towards student performance in higher education: Mediating effect of student engagement	cognitive, emotional, and behavioral engagement
(Machumu & Zhu, 2019)	Students' conceptions of learning approaches and their engagement in blended learning environments	cognitive, emotional, and behavioral engagement
(Gao et al., 2020b)	The effect of blended learning platform and engagement on students' satisfaction—— the case from the tourism management teaching	cognitive, emotional, and behavioral engagement

In two articles no type of involvement was found in their research. Article entitled Aiding Participation and Engagement in a Blended Learning Environment (Alrushiedat & Olfman, 2013). However, the findings suggest that AAOD facilitates greater and higher quality undergraduate student participation and engagement. AAOD is more likely to be perceived as helping improve student effort. Next, the article entitled Enhancing Student Engagement Using a Blended Learning Approach: Case Studies of First-Year Undergraduate Students. This study shows that listening to student voices through a blended learning approach helps increase student engagement, thereby increasing student participation in shaping and redesigning teaching and learning to engage them in the classroom and outside the classroom.

CONCLUSION

Higher education institutions have shown improvements in student academic performance in recent years. To achieve this goal, they have used innovative technology, which offers new ways to deliver and produce high-quality education. The blended learning model is a term used to describe educational management that combines information technology applications and face-to-face learning.

Successful educational programs before using blended learning were much worse. Technology opens many doors for students to participate in mathematics learning. At the undergraduate level, the use of a variety of digital tools increases students' behavioral and emotional engagement. On the other hand, in postgraduate studies, students' cognitive and emotional engagement is mainly targeted through sharing experiences and learning co-construction. This research uses a narrative

literature review method, which is carried out by compiling and presenting previous research findings in the form of narratives or stories. The author explains and interprets various research findings relevant to a particular topic using an approach based on narrative analysis.

In several articles that found behavioral, emotional, and cognitive involvement, not all of the findings showed that student involvement in blended learning increased. Other articles do not find specific types of engagement but research shows increased engagement in blended learning. One article found behavioral, cognitive, and affective engagement. This research also shows increased student engagement in blended learning. Next, there is one article that only finds one type of engagement, behavioral. This research also shows positive results.

SUGGESTION

This narrative literature review research is very suitable for researchers who have limitations in conducting experimental research. Researchers suggest further research to expand other learning models. Apart from the latest learning models, further research also needs to add data sources, not only from Scopus.

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